

APOLLO G&N SYSTEMS INDEX

ND 1000000 AE

Original Issue Date: 11/13/64

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Class A Release

APOLLO GUIDANCE & NAVIGATION

SYSTEMS INDEX

Record of Revisions

Date	Revision Letter	TDRR No.	Pages Revised	Approvals	
				AC	NASA
3-22-66	K	27349	Revised & Retyped Pgs. 1, 2, & 3	W/R	A. C. METZGER
5/18/66	L	29017	Revised Pgs 1 & 3	W/R	A. C. METZGER
(M) 8/4/66	M	30379	3 RDG/AC	EA	--
(M) 8/11/66	N	30590	3 RDG/AC	EA	---
(M) 9/8/66	P	31019	2 RDG/AC	EA	--
(M) 11/10/66	R	31924	3 RDG/AC	EA	--
(M) 12/8/66	S	32291	3 RDG/AC	EA	--
(M) 3/30/67	T	33463	3 RDG/AC	EA	--
(M) 4/14/67	U	33616	3 RDG/AC	MGM EA	--
(M) 6/30/67	V	34042	3 RDG/AC	EA	--
(M) 7-17-67	W	34165	3 RDG/AC	SB	--
(M) 10/17/67	Y	34861	2 RDG/AC	EA	--
(M) 2/15/68	Z	35652	3 GAF/AC	EA	--
(M) 5/14/68	AA	36215	3 GAF/AC	MGM EA	--
(M) 6/11/68	AB	36330	3 GAF/AC	EA	--
(M) 8/23/68	AC	36809	3 GAF/AC	MGM EA	--
(M) 9/18/68	AD	36838	3 GAF/AC	EA	--
12/12/68	AE	37119	3 GAF/AC	EA	--

APPROVALS

A. C. METZGER

NASA/MS

MIT/IL

AC

This systems index consists of page 1. to 3. inclusive.

APOLLO GUIDANCE & NAVIGATION

SYSTEMS INDEX

[illegible]

APPROVALS	A.C. Metzger NASA/MS	W. Kupfer 22 March 1966 MIT/IL	AC
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1a.

APOLLO GUIDANCE & NAVIGATION SYSTEMS INDEX

<u>Item</u>	<u>Title</u>	<u>Number</u>
8.	COMPUTER PROGRAM ASSEMBLY	
	A. Eclipse	1003203
	B. Artemis	1021100
	C. Moonglow	1021101
	D. Sunrise	1021102
	E. Sunrise	1021103
	F. Ares	1021104
	G. B*RLS 202	1021105
	H. RLS 202	1021106
	I. Retred 44	2021100
	J. Aurora	2021101
	K. Venus	2021102
	L. Retred 50	2021103
	M. Sundial	2021104
	N. Newspeak	2021105
	O. AS-204	1021107
	P. Solarium	1021108
	Q. Sunburst	2021106
	R. La Mesh	2021107
	S. Sundisk	2021108
	T. Sundance	2021110
	U. Colossus	2021111
	V. Luminary	2021112
	W. Colossus 2	2021113
9.	CONTRACT TECHNICAL SPECIFICATION APOLLO G&N EQUIPMENT	
	A. APOLLO Command Module & Associated Equipment - Block I	PS1000000
	B. APOLLO Command Module & Associated Equipment - Block II	PS2000000
	C. Airborne Primary Guidance, Navigation and Control Sub-system - LEM	PS6000000
10.	A/B G&N EQUIPMENT QUALIFICATION SPECIFICATIONS	
	A. Block I and Block I, 100 Series --	ND1002037
	B. Block II and LEM -	ND1002337
11.	G&N RETEST SPECIFICATION INDEXES	
	A. Command Module - Block I	ND1002362
	B. Command Module - Block II	ND1002363
	C. LEM	ND1002364
12.	FLIGHT PROGRAM ASSEMBLY	
	A. Block II	2021469
13.	DESIGN SPECIFICATION - G&N PLACARDS	
	A. Spacecraft 101	ND1002374
	B. Spacecraft 103	ND1002389
14.	PROCESS SPECIFICATION-IRIG and PIP Replacements	ND1002368

APOLLO GUIDANCE & NAVIGATION SYSTEMS INDEX

<u>Item</u>	<u>Title</u>	<u>Number</u>
1.	G&N SPACECRAFT EQUIPMENT	
A.	Command Module - Block I	1015000
B.	Command Module - Block II	2015000
C.	LEM	6015000
2.	G&N SUPPORTING DOCUMENT LIST	
A.	Command Module - Block I	1019999
B.	Command Module - Block II	2019999
C.	LEM	6019999
3.	INSTALLATION LIST APOLLO GUIDANCE EQUIPMENT	
A.	Block I	114999
B.	Block II	2014999
C.	LEM	6014999
4.	G&N MASTER RETROFIT KIT LIST	
A.	Command Module (A C Electronics)	1021200
B.	Computer (Raytheon)	8104001
C.	Misc. C. E. I. (Raytheon)	8104100
D.	OUA (Kollsman)	8106025
E.	(M. I. T.)	8100001
F.	AOT Kollsman	8106048
5.	ICD REFERENCE DRAWINGS	
A.	Block I	1021717
B.	Block II	
C.	LEM	6014500
D.	LEM	6014501
6.	G&N GROUND SUPPORT EQUIPMENT	1900030
7.	GSE MASTER RETROFIT KIT LIST	
A.	(A C Electronics)	1021201
B.	(Raytheon)	8104002
C.	(Kollsman)	8106001

This system index is for reference only.

6.3.1.6.5.3 When R3 = 00002, stop the LGC Self Check by entering the K-148 in the following:

VERB 34 ENTR
VERB 21 NOUN 27 ENTR
00000 ENTR

6.3.1.6.6 LGC Standby Check

6.3.1.6.6.1 On K-148, enter the following sequence:

VERB 21 NOUN 17 ENTR
+00000 ENTR

Start ACE Countdown clock upon depressing ENTR from an initial setting of 0 HRS, 0 MIN, 0 SEC. Record difference between LGC time on the CRT and the Countdown clock.

VERB 60 ENTR
Verify on CRT ABL-LGC-STBY is ON

6.3.1.6.6.2 On DSKY depress PRO pushbutton for approximately 3 seconds.

6.3.1.6.6.3 Verify STBY status indicator lamp is ON.

6.3.1.6.6.4 On the CRT, verify the 3.2 KC 28V Supply (GG1331) is between 28.04 and 29.16V RMS.

6.3.1.6.6.5 On DSKY depress PRO pushbutton for approximately 3 seconds to return to LGC OPERATE mode. If the LGC does not return to the OPERATE mode, depress the PRO pushbutton for a maximum of two additional times.

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1010304

REVISIONS

00686

SYM	DESCRIPTION	DATE	APPROVAL

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 3.
- MARKING: THE CONTAINER SHALL BE MARKED IN ACCORDANCE WITH MIL-STD-129 WITH MANUFACTURER'S NAME, IDENTIFYING NUMBER, ITEM NAME, AND NASA DRAWING NUMBER, AND REVISION LETTER.

2. DESIGN:

- MATERIAL SHALL BE AN AMINE TYPE CATALYST.
- CAPABILITIES: THIS MATERIAL SHALL BE SUITABLE FOR USE TO CURE RESIN MIXTURES.

PROCURE ONLY FROM APPROVED SOURCE LISTED IN ND 1002034 FOR THIS DRAWING.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
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LIST OF MATERIALS

		MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		DWG. NO. CONTRACT			
		DRAWN <i>Ray W. Smith</i> DATE <i>12/21/63</i>		CATALYST, AMINE SPECIFICATION CONTROL DRAWING	
		CHECKED <i>A. P. Smith</i> <i>12/21/63</i>			
		APPROVAL <i>A. C. Smith</i> <i>2-21-63</i>			
		APPROVAL			
		HEAT TREATMENT NONE		CODE IDENT NO. SIZE C	
NEXT ASSY USED ON		FINAL FINISH NONE		NASA DRAWING NO. 1010304	
APPLICATION				SCALE NONE WT SHEET 1 OF 1	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS A RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS A WARRANTY, OR LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSIONS OF PATENT, TRADEMARK, OR SELL OR PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3.
- EACH UNIT AND SHIPPING CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER, AND REVISION LETTER, DATE OF MANUFACTURE, LOT NUMBER AND EXPIRATION DATE FOR UNOPENED CONTAINERS.

2. INSPECTION AND ACCEPTANCE:

- MATERIAL: THE MATERIAL SHALL BE A LIQUID EPOXY RESIN

B. PROPERTIES:

- CURE: THIS MATERIAL WHEN MIXED IN RATIOS FROM 100 PARTS BY WEIGHT 1010657 TO 100 PARTS BY WEIGHT 1010686 SHALL CURE TO A TACK FREE CONDITION IN A MINIMUM OF 16 HOURS AT A TEMPERATURE OF $25 \pm 2^\circ\text{C}$.
- POT LIFE: A 50 GRAM QUANTITY OF MATERIAL CATALYZED AS IN B (1) SHALL BE USABLE THREE HOURS AFTER MIXING WHEN ALLOWED TO STAND AT $25 \pm 2^\circ\text{C}$.
- COLOR: UNLESS OTHERWISE SPECIFIED THE COLOR OF THE UNCATALYZED MATERIAL SHALL BE CLEAR.

3. DESIGN

- SHELF LIFE: THIS MATERIAL SHALL NOT BE USED AFTER ONE YEAR FROM THE DATE OF MANUFACTURE. MATERIAL SHALL HAVE AT LEAST EIGHT MONTHS USABLE SHELF LIFE WHEN RECEIVED BY THE USER.
- INTENDED USE: THIS MATERIAL IS INTENDED FOR USE IN APPLICATIONS REQUIRING A 100% SOLIDS, HIGH STRENGTH, ROOM TEMPERATURE CURING ADHESIVE.
- CURED MATERIAL PROPERTIES:
 - DIELECTRIC STRENGTH: THIS MATERIAL SHALL HAVE A MINIMUM DIELECTRIC STRENGTH OF 325 VOLTS/MIL WHEN TESTED AS OUTLINED IN MIL-I-16923, PARAGRAPH 4.4.5. MATERIAL FOR THIS TEST SHALL BE MIXED IN-A 1:1 WEIGHT RATIO WITH 1010686.
 - SHEAR STRENGTH: THIS MATERIAL WHEN MIXED IN A RATIO OF 1:1 BY WEIGHT WITH 1010686 CURED FOR 16 HOURS AND APPLIED ON AN ALUMINUM SUBSTRATE SHALL EXHIBIT A MINIMUM SHEAR STRENGTH OF 2000 PSI WHEN TESTED AS OUTLINED IN ASTM-D-1002.

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 102034 FOR THIS DRAWING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
FRACTIONS	DECIMALS ANGLES
\pm	\pm \pm
DO NOT SCALE THIS DRAWING	
MATERIAL	
SEE REQUIREMENTS	
HEAT TREATMENT	
NONE	
FINAL FINISH	
NONE	
NEXT ASSY	USED ON
APPLICATION	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS NO. CONTRACT		EPOXY RESIN	
DRAWN <u>I. PARKS</u> DATE <u>27 NOV 63</u>		SPECIFICATION CONTROL DRAWING	
CHECKED <u>E. FOSTER</u> 29 NOV 63		CODE IDENT NO. SIZE NASA DRAWING NO.	
APPROVAL <u>[Signature]</u> 1-7-64		<u>C</u> 1010657	
NASA APPROVAL <u>[Signature]</u>		SCALE <u>NONE</u>	WT
MIT APPROVAL <u>[Signature]</u> 7 Jan 64		SHEET 1 OF 1	

1010657

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
—	INITIAL RELEASE CLASS A PER TDRR 05617	11/7/69	W/K
A	REVISED PER TDRR 06194	5/22/69	W/K

1010657

PBR

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR ENDORSEMENT, OR IN ANY MANNER LITIGATING THE RIGHTS OF ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 3.
- EACH UNIT AND SHIPPING CONTAINER OF MATERIAL SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, AND DATE OF MANUFACTURE, LOT NUMBER AND EXPIRATION DATE FOR UNOPENED CONTAINERS.

2. ACCEPTANCE AND INSPECTION:

- MATERIAL: THIS MATERIAL SHALL BE A LOW VISCOSITY AMINE-AMIDE TYPE CURING AGENT.
- PROPERTIES:
 - COLOR: THE COLOR OF THE MATERIAL SHALL BE AMBER.
 - VISCOSITY: THE VISCOSITY SHALL BE 2,000 TO 25,000 CENTIPOISES AT $25^{\circ} \pm 1^{\circ}\text{C}$ WHEN TESTED WITH A BROOKFIELD RVF SPINDLE NO. 5 AT 10 RPM WHEN USING A CONTAINER 3-1/2 INCHES IN DIAMETER AND WITH A LIQUID DEPTH OF 2-1/2 INCHES MINIMUM.
 - SHEAR STRENGTH: WHEN MIXED AND CURED AS SPECIFIED IN 1010682 PARAGRAPH 3C, THE CURED MATERIAL SHALL COMPLY WITH THE SHEAR STRENGTH PROPERTIES SPECIFIED IN 1010682.

3. DESIGN REQUIREMENTS:

- SHELF LIFE: THIS CURING AGENT SHALL HAVE A MINIMUM USABLE SHELF LIFE WHEN RECEIVED OF ONE YEAR WHEN STORED AT A MAXIMUM OF 75°F IN CLOSED CONTAINERS.
- INTENDED USE: THIS MATERIAL IS INTENDED FOR USE IN CURING EPOXY ADHESIVES.

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
FRACTIONS	DECIMALS	ANGLES
\pm	\pm	\pm
		DO NOT SCALE THIS DRAWING
		MATERIAL
		SEE REQUIREMENTS
		HEAT TREATMENT
		NONE
NEXT ASSY	USED ON	FINAL FINISH
		NONE
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.		
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS Contract NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <u>SPLANE</u> DATE <u>1 NOV 63</u>		CURING AGENT, AMINE			
CHECKED <u>E. FOSTER</u> 4 NOV 63					
APPROVAL <u>S. Smith (by) SHAR 64</u>					
APPROVAL		SPECIFICATION CONTROL DRAWING			
NASA APPROVAL <u>W. J. Rhee</u> 13-5-64		CODE IDENT NO. SIZE	NASA DRAWING NO.		
MIT APPROVAL <u>W. J. Rhee</u> 13-5-64		C	1010683		
		SCALE NONE WT	SHEET 1 OF 1		

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REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- B. SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3.
- C. EACH SHIPPING AND UNIT CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, LOT NUMBER, DATE OF MANUFACTURE, AND EXPIRATION DATE FOR UNOPENED CONTAINERS. EACH UNIT CONTAINER SHALL BE MARKED WITH THE PROPER MIXING RATIO.

2. ACCEPTANCE AND INSPECTION:

- A. MATERIAL: THIS MATERIAL SHALL BE A TWO-COMPONENT SYSTEM CONSISTING OF A RESIN (COLOR:BLACK) IDENTIFIED AS 1010798-1 AND A PREPOLYMER (COLOR: CLEAR) IDENTIFIED AS 1010798-2. THE TWO COMPONENTS SHALL BE SUPPLIED AS LIQUIDS WHEN MIXED IN THE RATIO OF 100 ± 1 PARTS OF 1010798-1 TO 110 ± 1 PARTS OF 1010798-2 AND CURED AT ROOM AMBIENT FOR 1/2 HOUR IN A 50 ± 5 GRAM MASS, A POLYESTER TYPE CARBON DIOXIDE BLOWN RIGID POLYURETHANE FOAM SHALL RESULT.
- B. PROPERTIES:

- (1) DENSITY: THE DENSITY OF THE FOAM SHALL BE 8 POUNDS ± 24 OZ., -8 OZ./FT³ WHEN TESTED AS FOLLOWS:
 - (a) THE RESIN, 1010798-1, SHALL BE HEATED TO $100 \pm 5^\circ\text{F}$. THE PREPOLYMER 1010798-2 SHALL BE USED AT ROOM AMBIENT.
 - (b) 420 GR. OF THE MATERIAL SHALL BE PREPARED IN A RATIO OF 100 ± 1 PARTS OF 1010798-2 BY ADDING 200 ± 2 GR. OF THE RESIN TO 220 ± 2 GR. OF THE PREPOLYMER IN A CONTAINER WITH DIMENSIONS OF 4 ± 1 INCH IN DIAMETER AND A MINIMUM OF 6 INCHES IN HEIGHT.
 - (c) THE MATERIAL SHALL BE MIXED USING A MOTOR DRIVEN IMPELLER, WITH A DIAMETER OF $1-1/2 \pm 1/2$ INCH AND CAPABLE OF STIRRING THE MIXTURE AT 1800 ± 300 RPM. THE MIXTURE SHALL BE STIRRED FOR 1 MINUTE.
CAUTION: DO NOT MIX TO THE POINT WHERE THE MIXTURE CREAMS. THIS RESULTS IN HIGH DENSITY READINGS.
 - (d) POUR A MINIMUM OF 350 GRAMS OF THE MIXED MATERIAL INTO A ONE QUART BOX WITH DIMENSIONS OF $4-1/2 \pm 1/2$ INCH WIDE, $6-1/2 \pm 1/2$ INCHES LONG AND A MINIMUM OF $3-1/2$ INCHES IN HEIGHT. THE MIXTURE SHALL BE DISTRIBUTED EVENLY THROUGHOUT THE BOX WHILE POURING. ONCE THE MIXTURE IS IN THE BOX DO NOT DISTURB THE BOX FOR 1/2 HOUR.
 - (e) ALLOW THE SAMPLE TO FREE BLOW AND CURE AT ROOM AMBIENT FOR A MINIMUM OF 1/2 HOUR.
 - (f) AFTER THE CURE IS COMPLETED A SAMPLE OF THE FOAM SHALL BE CUT TO A SIZE CONVENIENT FOR MEASUREMENT AND EXAMINATION. ALL SKIN SHALL BE REMOVED. THE VOLUME OF THE SAMPLE SHALL BE A MINIMUM OF 25 CUBIC INCHES. THE RESULTING SAMPLE SHALL BE MEASURED TO AN ACCURACY OF ± 0.005 INCH AND WEIGHED TO AN ACCURACY OF ± 0.05 GRAMS. DENSITY SHALL BE CALCULATED IN POUNDS PER CUBIC FOOT AS FOLLOWS:
DENSITY IN GRAMS/IN. $\times 3.806 =$ DENSITY IN POUNDS/FT.³
- (2) APPEARANCE: THE FOAM CURED AS IN ITEM 1 ABOVE SHALL BE A UNIFORM BLACK IN COLOR, SHALL EXHIBIT NO EXCESSIVE VOIDS AND SHALL HAVE A UNIFORM CELL STRUCTURE. THE FOAM SURFACE SHALL BE FIRM AND TACK-FREE AND SHALL NOT BE FRIABLE.

66L0101

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A 11335	4/24/64	W/L
A	REVISED PER TDRR 19195	5/26/64	W/L
B	REVISED PER TDRR 20240	5/26/64	W/L
C	REVISED PER TDRR 21778	6/18/64	W/L
D	REVISED PER TDRR 23642	11/16/64	W/L

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWS NO. CONTRACT HAS 9-497 DRAWN <i>Bender</i> 24 JUL-64 CHECKED <i>W. D. H. 27 JUL 64</i> APPROVAL <i>A. R. Red 8-4-64</i> APPROVAL				MANNED SPACECRAFT CENTER HOUSTON, TEXAS FOAM, POLYURETHANE SPECIFICATION CONTROL DRAWING CODE IDENT NO. SIZE 80230 C SCALE NONE WT SHEET 1 OF 2			
NEXT ASSY		USED ON		HEAT TREATMENT NONE		NASA APPROVAL <i>W. K. R. 4/24/64</i> MIT APPROVAL <i>W. K. R. 4/24/64</i>	
APPLICATION				FINAL FINISH NONE			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm DO NOT SCALE THIS DRAWING MATERIAL SEE REQUIREMENTS							

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS AN IMPLIED LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

REQUIREMENTS: (CONTINUED)

3. DESIGN REQUIREMENTS:

A. SHELF LIFE: THE MATERIAL COVERED BY THIS SPECIFICATION SHALL BE CAPABLE OF MEETING THE REQUIREMENTS CONTAINED HEREIN FOR A MINIMUM PERIOD OF 6 MONTHS FROM THE DATE OF SHIPMENT WHEN STORED AT 80°F MAXIMUM IN UNOPENED CONTAINERS.

B. INTENDED USE: THIS MATERIAL IS INTENDED AS A POTTING OR ENCAPSULATING MEDIUM WHICH WILL PROVIDE A LIGHT WEIGHT INSULATION AND WHICH WILL MAINTAIN THE SPATIAL RELATIONSHIP BETWEEN COMPONENTS WHERE THESE COMPONENTS ARE SUBJECT TO CONDITIONS OF VIBRATION, SHOCK, AND ACCELERATION.

C. DESIGN PROPERTIES:

- (1) COMPRESSIVE YIELD STRENGTH: THE COMPRESSIVE YIELD STRENGTH OF THIS MATERIAL WHEN TESTED AS OUTLINED BELOW SHALL BE A MINIMUM OF 180 POUNDS PER SQUARE INCH. THE SAMPLE SHALL BE CURED FOR 2 HOURS MINIMUM AT $175 \pm 5^\circ\text{F}$ AND SHALL THEN BE PREPARED AND TESTED PER ASTM-D-695 WITH THE EXCEPTION THAT THE CROSS HEAD SPEED OF THE TESTING MACHINE SHALL BE 0.10 INCH PER MINUTE. THE SAMPLE SHALL BE A RIGHT CYLINDER 1/2 INCH IN DIAMETER AND 1 INCH IN LENGTH. THE COMPRESSIVE YIELD STRENGTH SHALL BE DETERMINED IN THE DIRECTION OF FOAM RISE. THE COMPRESSIVE YIELD SHALL BE CALCULATED FROM THE STRESS STRAIN DIAGRAM AT 2.0 PER CENT OFFSET YIELD STRESS.
- (2) THERMAL SHOCK: THE CURED FOAM SHALL SHOW NO SPALLING OR CRACKING WHEN TESTED AS FOLLOWS: A SAMPLE OF FULLY CURED FOAM, 2 INCHES IN DIAMETER AND 1/4 INCH IN HEIGHT SHALL BE HEATED TO $200^\circ \pm 2^\circ\text{F}$ FOR 1/2 HOUR IN AN AIR CIRCULATING ELECTRICALLY HEATED OVEN. THE SAMPLE SHALL BE REMOVED FROM THE OVEN AND IMMEDIATELY PLUNGED INTO AN ALCOHOL-DRY ICE BATH AT $-67^\circ \pm 4^\circ\text{F}$ AND HELD THERE FOR 10 MINUTES. THIS PROCEDURE SHALL BE REPEATED 10 TIMES ON THE SAME SAMPLE.
- (3) THERMAL CONDUCTIVITY: THERMAL CONDUCTIVITY SHALL BE A MINIMUM OF .20 BTU/HR./FT²/IN./°F WHEN TESTED AS OUTLINED IN ASTM-C-177.
- (4) WATER ABSORPTION: WHEN A SAMPLE OF THE FULLY CURED FOAM WITH ALL SKIN REMOVED IS TESTED AS SPECIFIED IN THE WATER ABSORPTION PARAGRAPH OF MIL-I-16923 THE FOAM SHALL EXHIBIT A MAXIMUM WATER ABSORPTION OF 1.5% AS CALCULATED PER UNIT OF VOLUME.
- (5) DIELECTRIC STRENGTH: DIELECTRIC STRENGTH SHALL BE A MINIMUM OF 40 VOLTS PER MIL WHEN TESTED IN A .120 \pm .005" THICKNESS USING A SAMPLE WITH SKIN ON ONE SIDE AND APPLYING THE VOLTAGE AT A RATE OF 500 VOLTS PER SECOND.
- (6) DIELECTRIC CONSTANT: DIELECTRIC CONSTANT SHALL BE A MAXIMUM OF 1.50 WHEN TESTED IN ACCORDANCE WITH ASTM-D-1673-61.

8670101

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A 11335	11/1/65	WJR
A	REVISED PER TDRR 19195	11/1/65	WJR
B	REVISED PER TDRR 20240	11/1/65	WJR
C	REVISED PER TDRR 21778	11/1/65	WJR
D	REVISED PER TDRR 23642	11/1/65	WJR

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS. Contract NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Bender</i> DATE <i>28-JUL-64</i> CHECKED <i>W. D. H. 27 JUL 64</i> APPROVAL <i>B. R. T. 28-JUL-64</i> APPROVAL		FOAM, POLYURETHANE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm DO NOT SCALE THIS DRAWING MATERIAL		SPECIFICATION CONTROL DRAWING	
HEAT TREATMENT		NASA APPROVAL <i>[Signature]</i>	CODE IDENT NO. 80230
FINAL FINISH		MIT APPROVAL <i>[Signature]</i>	SIZE C
NEXT ASSY	USED ON	SCALE	WT
APPLICATION		SHEET 2 OF 2	

NASA DRAWING NO.

1010798

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSION, MISSTATEMENT, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSES THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3.
- C. EACH SHIPPING AND UNIT CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, LOT NUMBER, DATE OF MANUFACTURE, AND EXPIRATION DATE FOR MATERIAL IN UNOPENED CONTAINERS.
- D. PACKAGING AND PACKING: PACKAGING AND PACKING OF THE MATERIAL SHALL BE IN ACCORDANCE WITH STANDARD COMMERCIAL PRACTICE.

2. ACCEPTANCE AND INSPECTION:

- A. MATERIAL: THE MATERIAL COVERED BY THIS SPECIFICATION SHALL BE A RESIN-CATALYST MIXTURE TO BE USED IN A TWO COMPONENT RIGID POLYURETHANE FOAM SYSTEM CONSISTING OF SCD 1010863 AND SCD 1010864.
- B. PROPERTIES:
 - (1) COLOR: AMBER
 - (2) VISCOSITY AT 77°F. 20,000 TO 30,000 CENTIPOISES WHEN TESTED WITH A BROOKFIELD VISCOMETER, MODEL LVF USING A NO.4 SPINDLE, ROTATED AT 6 RPM.
 - (3) DENSITY (CURED MATERIAL): WHEN PREPARED AND TESTED AS SPECIFIED IN SCD 1010864, THE RESULTING POLYMER SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED IN SCD 1010864.

3. DESIGN:

- A. INTENDED USE: THIS MATERIAL IS INTENDED TO BE USED IN COMBINATION WITH THE MATERIAL SPECIFIED ON SCD 1010864 IN APPLICATIONS WHERE A LOW DENSITY ENCAPSULANT IS REQUIRED WHICH WILL PROVIDE GOOD THERMAL INSULATION.
- B. SHELF LIFE: WHEN STORED IN UNOPENED CONTAINERS AT A TEMPERATURE NOT TO EXCEED 80°F, THE MATERIAL SHALL HAVE A 6 MONTH SHELF LIFE FROM DATE OF ANALYSIS CERTIFICATION AND A MINIMUM USABLE SHELF LIFE OF 3 MONTHS WHEN RECEIVED BY THE PURCHASER

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON	
FRACTIONS	DECIMALS ANGLES
± —	± — ± —
DO NOT SCALE THIS DRAWING	
MATERIAL	
SEE REQUIREMENTS	
HEAT TREATMENT	
NONE	
FINAL FINISH	
NONE	
NEXT ASSY	USED ON
APPLICATION	
NONE	

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS NO. Contract NAS 9-497		POLYURETHANE RESIN	
DRAWN <i>W. J. P. 10/10/64</i> DATE <i>9/10/64</i>		SPECIFICATION CONTROL DRAWING	
CHECKED <i>Ed Foster</i> 10 Nov 64		NASA APPROVAL <i>W. J. P. 10/10/64</i>	
APPROVAL <i>W. J. P. 10/10/64</i>		NASA DRAWING NO.	
MIT APPROVAL <i>W. J. P. 10/10/64</i>		C 1010863	
SCALE NONE		WT	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3.
- EACH SHIPPING AND UNIT CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, LOT NUMBER, DATE OF MANUFACTURE, AND EXPIRATION DATE FOR MATERIAL IN UNOPENED CONTAINERS.
- PACKAGING AND PACKING: PACKAGING AND PACKING OF THE MATERIAL SHALL BE IN ACCORDANCE WITH STANDARD COMMERCIAL PRACTICE.

2. ACCEPTANCE AND INSPECTION:

- MATERIAL: THE MATERIAL COVERED BY THIS SPECIFICATION SHALL BE A POLYURETHANE PREPOLYMER MEETING THE REQUIREMENTS SPECIFIED HEREIN.
- PROPERTIES: THE MATERIAL SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED IN TABLE 1.
- DENSITY: THE DENSITY OF A FREE BLOWN SAMPLE OF THE CURED MATERIAL SHALL BE 1.95 TO 2.15 LBS/CU. FT. WHEN TESTED AS FOLLOWS.
 - THE RESIN, 1010863, SHALL BE HEATED TO $100 \pm 5^\circ\text{F}$. THE PREPOLYMER, 1010864, SHALL BE USED AT ROOM AMBIENT.
 - 147 GR. OF THE MATERIAL SHALL BE PREPARED IN A RATIO OF 100 ± 1.0 PARTS BY WEIGHT OF 1010863 TO 145 ± 1.5 PARTS BY WEIGHT OF 1010864 BY ADDING 60 ± 0.6 GRAMS OF THE HEATED RESIN TO 87 ± 0.9 GRAMS OF THE PREPOLYMER IN A CONTAINER WITH DIMENSIONS OF 4 ± 1 INCH IN DIAMETER AND A MINIMUM OF 6 IN. HEIGHT.
 - THE MATERIAL SHALL BE MIXED USING A MOTOR DRIVEN IMPELLER WITH A DIAMETER OF 1.5 ± 0.5 INCHES AND CAPABLE OF STIRRING THE MIXTURE AT 1800 ± 300 RPM. THE MIXTURE SHALL BE STIRRED FOR 15 TO 20 SECONDS.
 - POUR A MINIMUM OF 100 GRAMS OF THE MIXED MATERIAL INTO A 1/2 GALLON BOX WITH DIMENSIONS OF $4-1/2 \pm 1/2$ INCHES LONG AND A MINIMUM OF $3-1/2$ INCHES IN HEIGHT. THE MIXTURE SHALL BE DISTRIBUTED EVENLY THROUGHOUT THE BOX WHILE POURING. ONCE THE MIXTURE IS IN THE BOX, DO NOT DISTURB THE BOX FOR 1/2 HOUR.
 - ALLOW THE SAMPLE TO FREE BLOW AT ROOM TEMPERATURE. CURE THE FREE BLOWN SAMPLE FOR 1 HOUR AT ROOM TEMPERATURE OR 1/2 HOUR AT 150°F .
 - AFTER THE CURE IS COMPLETED, A SAMPLE OF THE FOAM SHALL BE CUT TO A SIZE CONVENIENT FOR MEASUREMENT AND EXAMINATION. ALL SKIN SHALL BE REMOVED. THE VOLUME OF THE SAMPLE SHALL BE A MINIMUM OF 25 CUBIC INCHES. THE RESULTING SAMPLE SHALL BE MEASURED TO AN ACCURACY OF ± 0.005 INCH AND WEIGHED TO AN ACCURACY OF ± 0.05 GRAMS. DENSITY SHALL BE CALCULATED IN POUNDS PER CUBIC FOOT AS FOLLOWS:
 $\text{DENSITY IN GRAMS/IN.} \times 3.809 = \text{DENSITY IN POUNDS/FT.}^3$
- APPEARANCE: WHEN CURED AS SPECIFIED IN 2C, THE MATERIAL SHALL HAVE A UNIFORM, PREDOMINANTLY CLOSED CELL STRUCTURE, WHITE IN COLOR AND BE FREE OF TACKY SKIN.

3. DESIGN:

- INTENDED USE THIS MATERIAL IS INTENDED TO BE USED IN COMBINATION WITH THE MATERIAL SPECIFIED ON SCD 1010863 IN APPLICATIONS WHERE A LOW DENSITY ENCAPSULANT IS REQUIRED WHICH WILL PROVIDE GOOD THERMAL INSULATION.
- SHELF LIFE: WHEN STORED IN UNOPENED CONTAINERS AT A TEMPERATURE NOT TO EXCEED 80°F , THE MATERIAL SHALL HAVE A 6 MONTHS SHELF LIFE FROM DATE OF ANALYSIS CERTIFICATION AND A MINIMUM USABLE SHELF LIFE OF 3 MONTHS WHEN RECEIVED BY THE PURCHASER.

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

1010864 B

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR	15248	WIK
A	REVISED PER TDRR 18754	5/11/65	WIK
B	REVISED PER TDRR 26792	3/8/66	WIK

TABLE 1

PROPERTY	TEST METHOD	REQUIREMENT
COLOR	ASTM D 1638	GARDNER NO.2
VISCOSITY AT 77°F	USING A BROOKFIELD VISCOMETER, MODEL LVF, NO.3 SPINDLE, AT 30 RPM.	450 ± 150 CENTIPOISES
WEIGHT PER GALLON	FEDERAL TEST METHOD STD NO.141 METHOD 4184.	10.2 ± 0.5 LB.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS CONTRACT NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>W. J. R. H.</i> DATE 7/11/64 CHECKED <i>Ed Foster</i> 1 Nov 64 APPROVAL <i>W. J. R. H.</i> 1-5-65		POLYURETHANE PREPOLYMER	
SPECIFICATION CONTROL DRAWING			
NASA APPROVAL <i>W. J. R. H.</i> 1-5-65	CODE 'DENT NO.	SIZE	NASA DRAWING NO.
MIT APPROVAL <i>W. J. R. H.</i> 1-5-65	80230	C	1010864
SCALE NONE		WT	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT HEREBY DISCLAIMS ANY LIABILITY FOR ANY DEFICIENCY, INACCURACY, OR OMISSION, AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWING, SPECIFICATION, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TORR	15248	WHL
A	REVISED PER TORR 21426	15248	WHL

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
- SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3
- EACH SHIPPING AND UNIT CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, LOT NUMBER, DATE OF MANUFACTURE, AND EXPIRATION DATE FOR MATERIAL IN UNOPENED CONTAINERS
- PACKING AND PACKAGING: PACKING AND PACKAGING OF THE MATERIAL SHALL BE IN ACCORDANCE WITH STANDARD COMMERCIAL PRACTICE

2. ACCEPTANCE AND INSPECTION:

- MATERIAL: THE MATERIAL SHALL BE A POLYURETHANE PREPOLYMER MEETING THE REQUIREMENTS OF THIS SPECIFICATION
- COLOR: UNLESS OTHERWISE SPECIFIED, THE MATERIAL SHALL BE FURNISHED PIGMENTED BLACK
- PROPERTIES: THE MATERIAL SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED IN TABLE I
- DENSITY: THE DENSITY OF A FREE BLOWN SAMPLE SHALL BE 2.5 TO 3.5 LB/ CU FT WHEN TESTED IN ACCORDANCE WITH THE FOLLOWING:
 - MIX A 70 TO 90 GRAM QUANTITY OF THE MATERIAL IN A RATIO OF 100 ± 2 PBW POLYURETHANE PREPOLYMER 1010865 TO 0.70 ± 0.01 PBW SILICONE FLUID, DIMETHYL POLYSILOXANE PER MIL-S-21568, 50 CENTISTOKE GRADE AND 3.8 ± 0.10 PBW CATALYST 1010866 AND POUR IN- TO A 1/2 GALLON, OPEN TOP RECTANGULAR CONTAINER HAVING A BASE AREA OF APPROX. 40 SQ. INCHES. THE CATALYST SHALL BE THE LAST CONSTITUENT ADDED TO THE MIXTURE
 - ALLOW THE ACTIVATED MATERIAL TO CURE FOR 15 TO 30 MINUTES AT $77^\circ \pm 5^\circ\text{F}$
 - REMOVE THE CURED MATERIAL FROM THE CONTAINER AND IMMEDIATELY COMPRESS IT TO 10 TO 25% OF ITS ORIGINAL FREE BLOWN THICKNESS TO RUPTURE ANY CLOSED CELLS WHICH MAY BE PRESENT. REMOVE THE COMPRESSIVE FORCE AND ALLOW THE MATERIAL TO RETURN TO ITS ORIGINAL FREE BLOWN THICKNESS
 - DETERMINE THE DENSITY OF THE CURED MATERIAL IN ACCORDANCE WITH ASTM D 1564
 - A TACKY SKIN IS INHERENT IN THIS MATERIAL AND SHALL NOT BE CONSTRUED AS OBJECTIONABLE

PROCURE ONLY FROM APPROVED SOURCE LISTED ON ND 1002034 FOR THIS DRAWING

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS Contract NAS 9-497				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <u>Bender 20 NOV-64</u> CHECKED <u>Ed Foster 20 Nov 64</u> APPROVAL <u>W. J. R. 1-5-65</u> APPROVAL				POLYURETHANE PREPOLYMER			
HEAT TREATMENT				SPECIFICATION CONTROL DRAWING			
NASA APPROVAL <u>W. J. R. 1-5-65</u> MIT APPROVAL <u>WHL 1/5/65</u>				CODE IDENT NO. SIZE C		NASA DRAWING NO. 1010865	
APPLICATION				SCALE NONE		SHEET 1 OF 2	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OMISSION, MISSTATEMENT, OR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA. IT NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY INVENTED INVENTION THAT MAY IN ANY WAY BE RELATED HERETO.

✓ 5980101

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR	15248	wjc
4	REVISED PER TDRR 21426	8/2/65	wjc

3. DESIGN:

- A. PROPERTIES: WHEN PREPARED AS SPECIFIED IN SECTION 2D, THE CURED MATERIAL SHALL FORM A FLEXIBLE OPEN CELLED STRUCTURE MEETING THE REQUIREMENTS SPECIFIED IN TABLE II
- B. SHELF LIFE: THE MATERIAL SHALL HAVE A 3 MONTH MINIMUM USABLE SHELF LIFE WHEN RECEIVED BY THE PURCHASER AND STORED AT A MAXIMUM OF 80°F IN UNOPENED CONTAINERS
- C. INTENDED USE: THIS MATERIAL IS INTENDED TO BE USED WITH SILICONE FLUID DIMETHYL POLYSILOXANE PER MIL-S-21568, 50 CENTISTOKE GRADE AND 1010866 IN FORMULATING A THREE COMPONENT FOAM SYSTEM WHERE A LOW DENSITY, FLEXIBLE MATERIAL IS REQUIRED WHICH WILL PROVIDE GOOD THERMAL INSULATION IN APPLICATIONS WHERE SERVICE TEMPERATURE DOES NOT EXCEED 200°F

TABLE I

PROPERTY	TEST METHOD	REQUIREMENT
VISCOSITY AT 77°F	USING A BROOKFIELD VISCOMETER, MODEL RVF, NO. 3 SPINDLE AT 6 RPM	1100 ± 100 CENTIPOISES
WEIGHT PER GALLON	FED. TEST METHOD STD NO. 141 METHOD 4184	9.0 ± 0.5 LB.

TABLE II

PROPERTY	TEST METHOD	REQUIREMENT
FLAMMABILITY	ASTM D 1692	SELF EXTINGUISHING
TENSILE STRENGTH	ASTM D 1623, TYPE B	10 PSI MIN.
ELONGATION	ASTM D 1623, TYPE B	125% MIN.
THERMAL CONDUCTIVITY	ASTM D 1674	0.30 BTU/HR/SQ FT/°F/INCH/MAX.
COLOR	VISUAL	BLACK SEE NOTE I
LOAD DEFLECTION	ASTM D 1564, METHOD A	
25%		18 TO 26 LB/50 SQ. IN.
50%		26 TO 36 LB/50 SQ. IN.
TEAR STRENGTH	ASTM D 1564	1.5 LB/IN MIN.

NOTES

- I. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR ORDER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ±
		DO NOT SCALE THIS DRAWING
		MATERIAL
		HEAT TREATMENT
		FINAL FINISH
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS Dwg. NO. Contract NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Bender</i> DATE <i>20-Nov-64</i> CHECKED <i>Ed Foster</i> DATE <i>20-Nov-64</i> APPROVAL <i>William L. 1-5-65</i> APPROVAL		POLYURETHANE PREPOLYMER, BLACK PIGMENTED SPECIFICATION CONTROL DRAWING	
NASA APPROVAL <i>W. J. Kline</i> 1-5-65		CODE IDENT NO. SIZE C	NASA DRAWING NO. 1010865
MIT APPROVAL <i>W. J. Kline</i> 1-5-65		SCALE NONE	WT SHEET 2 OF 2

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9980101

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR	15248	Wk

TES:

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
- SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3
- EACH SHIPPING AND UNIT CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, LOT NUMBER, DATE OF MANUFACTURE, AND EXPIRATION DATE FOR MATERIAL IN UNOPENED CONTAINERS
- PACKING AND PACKAGING: PACKING AND PACKAGING OF THE MATERIAL SHALL BE IN ACCORDANCE WITH STANDARD COMMERCIAL PRACTICE

2. ACCEPTANCE AND INSPECTION:

- MATERIAL: THE MATERIAL SHALL BE A LOW VISCOSITY AMINE TYPE CURING AGENT (CATALYST)
- COLOR: CLEAR
- PROPERTIES: WHEN MIXED WITH POLYURETHANE PREPOLYMER 1010865 AND SILICONE FLUID, DIMETHYL POLYSILOXANE PER MIL-S-21568, 50 CENTISTOKE GRADE AS SPECIFIED IN 1010865, THE RESULTING POLYMER SHALL MEET THE MINIMUM REQUIREMENTS SPECIFIED THEREIN

3. DESIGN:

- INTENDED USE: THIS MATERIAL IS INTENDED TO BE USED AS THE CURING AGENT IN A THREE COMPONENT FLEXIBLE URETHANE FOAM SYSTEM CONSISTING OF 1010865, 1010866, AND MIL-S-21568, 50 CENTISTOKE GRADE
- SHELF LIFE: THE MATERIAL SHALL HAVE 3 MONTHS MINIMUM USABLE SHELF LIFE WHEN RECEIVED BY THE PURCHASER AND STORED AT A MAXIMUM OF 80°F. IN UNOPENED CONTAINERS

C. MATERIAL:

- MATERIALS COMPATIBILITY: ONLY THESE MATERIALS/COMPOSITIONS/COMPOSITES FOUND TO BE NONTXIC AND NONFLAMMABLE WHEN TESTED AS SPECIFIED IN ND1002251 AND ND1002252 SHALL BE APPROVED.

FIGURE ONLY FROM APPROVED SOURCE LISTED ON ND 1002034 FOR THIS DRAWING

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS Contract NAS 9-497				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DWC NO. 20-NOV-64 DRAWN <i>Rander</i> DATE CHECKED <i>Ed Foster</i> 20 Nov 64 APPROVAL <i>W. J. Rander</i> 1-5-65				CATALYST			
DO NOT SCALE THIS DRAWING MATERIAL				SPECIFICATION CONTROL DRAWING			
HEAT TREATMENT				CODE IDENT NO.		SIZE	
FINAL FINISH				C		NASA DRAWING NO 1010866	
MIT APPROVAL <i>W. J. Rander</i>				SCALE NONE		WT	
NEXT ASSY USED ON				SHEET		OF 1	
APPLICATION							

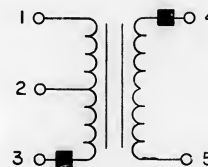
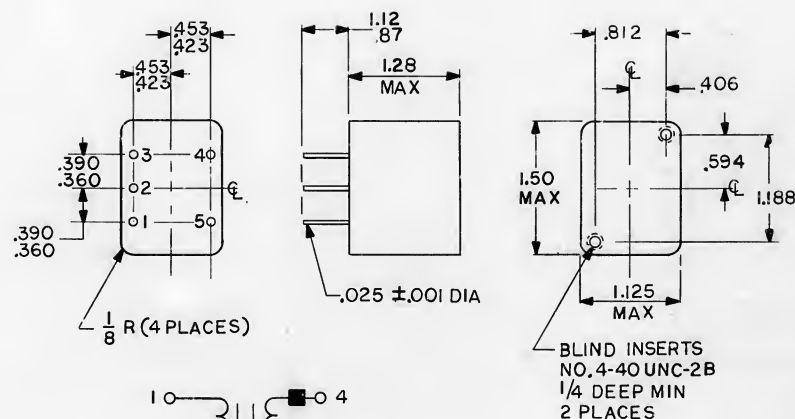
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER; AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FORWARDED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE DEEMED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TDRR 16988			3-2-65	W.

REQUIREMENTS:

1. GENERAL:
 - A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
 - B. UNITS SHALL BE CAPABLE OF MEETING THE REQUIREMENTS OF MIL-T-27 WITH THE ADDITIONS AND EXCEPTIONS SPECIFIED HEREIN.
 - C. SUPPLIERS SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS AS CONTAINED IN ND 1015404, CLASS 2
 - D. UNITS SHALL MEET THE QUALIFICATION REQUIREMENTS OF ND 1002047.
2. INSPECTION AND ACCEPTANCE:
 - A. MECHANICAL REQUIREMENTS:
 1. LEAD MATERIAL SHALL BE PER ND 1015400. A CERTIFICATE OF COMPLIANCE WITH THIS REQUIREMENT SHALL ACCOMPANY EACH SHIPMENT.
 2. MARKING-MANUFACTURER'S SERIAL NUMBER, ALL MARKING REQUIREMENTS OF MIL-T-27, IN ACCORDANCE WITH ND 1002019 AND NASA DRAWING NUMBER (1010886) AND REVISION LETTER SHALL BE PERMANENTLY AND LEGIBLY MARKED ON THE UNIT.
 3. DIMENSIONS: SEE FIGURE
 - B. ELECTRICAL REQUIREMENTS - UNIT SHALL MEET ALL REQUIREMENTS OF TABLE I AND TABLE II
3. DESIGN:
 - A. THE UNIT SHALL MEET ALL REQUIREMENTS OF MIL-T-27, TYPE TF58X01ZZ.
 - B. WORKING VOLTAGE: 175 VOLTS
 - C. UNIT SHALL BE LAYER WOUND.
4. SPECIAL CONDITIONING (BY MANUFACTURING): 100% TRANSFORMER SHALL BE TEMPERATURE CYCLED FOR 5 CYCLES PER STD-202 METHOD 102 EXCEPT THAT THE TEMPERATURE SHALL BE -55°C., +25°C., AND +105°C., AND EXPOSURE TIME SHALL BE 15 MINUTES AT EACH TEMPERATURE. DURING THE LAST CYCLE THE UNIT SHALL BE TESTED FOR CONTINUITY AT EACH OF THE AMBIENT CONDITIONS. AFTER STABILIZATION AT ROOM TEMPERATURE UNIT SHALL PASS NORMAL INSPECTION TESTS.



SCHEMATIC

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES $\pm 1/64 \pm .005 \pm$ DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	<i>A. Addams Jr.</i>	251-65	TRANSFORMER, POWER (800 CPS)	
CHECKED	<i>A. M. Smith</i>	2-26-65		
APPROVED	<i>A. Kromer</i>	1 March		
APPROVED				
APPROVED MIT	<i>W. J. Rhee</i>	24 March	CODE IDENT NO. SIZE	DRAWING NO.
APPROVED MSC	<i>W. J. Rhee</i>	32-65	C	1010886
	DATE	SCALE	NONE	SHEET 1 OF 2

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT INCURS NO RESPONSIBILITY AND NO OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE PATENTED, FUNDED, OR IN ANY WAY SUPPLIED THE BASIC DRAWING, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSES THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERS ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
-		INITIAL RELEASE CLASS A PER TORR 16908			3-2-65

TABLE I ELECTRICAL PARAMETER SPECIFICATION			
PARAMETER	TEST CONDITIONS	LIMITS	
		MAX	MIN
$Y_{ocp}=G-jB$	$V(1-3)=28VRMS$ $f = 800CPS$	$G=8.93 \times 10^{-4}$ $B=1.11 \times 10^{-2}$	$()$ 9.09×10^{-3}
$Z_{scp}=R+jX$	$I(1-3)=1AMP RMS$ $f = 800CPS$	$R=2.00$ $X=2.19$	0 0
Turns Ratio $N(1-2)/N(4-5)$	$V(1-2)=15VRMS$ $f = 800 CPS$.505	.490
Turns Ratio $N(2-3)/N(4-5)$	$V(2-3)=15VRMS$ $f = 800 CPS$.505	.490
CENTER TAP BALANCE $N(1-2) - N(2-3)$ $N(1-5) - N(4-5)$		$\pm .01$	0
HARMONIC DISTORTION OF I_m	$V(1-2)=15VRMS$ $f = 800 CPS$	1.65%	0
HARMONIC DISTORTION OF I_m	$V(1-2)=25VRMS$ $f=800CPS$	4.00%	0

TABLE II INSPECTION AND ACCEPTION TESTS	
PERFORM TESTS PER MIL-T-27	
SEALING	
DIELECTRIC STRENGTH: TEST VOLTAGE: 500 VOLTS	
INDUCED VOLTAGE: TEST VOLTAGE: 56 VOLTS AT 1600 CPS AT TERMINALS 1-3, SECONDARY OPEN	
INSULATION RESISTANCE: 10,000 MEG. MIN. AT 25	
POLARITY: TERMINALS 3 & 4 SHALL BE OF LIKE POLARITY	

DEFINITIONS

Y_{ocp} : THE ADMITTANCE OF THE PRIMARY WITH THE SECONDARY OPEN CIRCUITED

Z_{scp} : THE IMPEDANCE OF THE PRIMARY WITH THE SECONDARY SHORT CIRCUITED

I_m : THE PRIMARY CURRENT WITH THE SECONDARY OPEN CIRCUITED

ALL ADMITTANCES ARE IN MHOS

ALL IMPEDANCES ARE IN OHMS

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μf RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm _____ \pm _____ \pm _____ DO NOT SCALE THIS DRAWING MATERIAL _____
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. Addario</i> 3-1-65		TRANSFORMER, POWER (800 CPS)		
CHECKED <i>G. Marks</i> 3-1-65				
APPROVED <i>M. Kramer</i> 1/1/65				
APPROVED				
APPROVED <i>W. G. Rhee</i> 2/1/65		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>W. G. Rhee</i> 3-2-65			C	1010886
		DATE	SCALE NONE	SHEET 2 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327.

2. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

3. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING.

THIS IS AN INCOMPLETE DRAWING

SEE NOTE 2

SEE NOTE 2

SEE NOTE 3

2		COVER, LGC CONNECTOR	
1		CONNECTOR, LGC OUTPUT	
2		CLAMP, CDU CONNECTOR	
2		COVER, CDU CONNECTOR	
1		CONNECTOR, CDU OUTPUT	
5	1010981	GROMMET	
51	1010979	TAPER PIN	
5	1010978	BLOCK, TAPER PIN	
1		DISTRIBUTION BOX	
250	1010490	SLEEVE, INSUL (HEAT SHRINKABLE)	
AR	1010661	EPOXY RESIN	
AR	1010679	ADHESIVE ACTIVATOR	
AR	1012503	COMPOUND, POTTING, POLYURETHANE	
AR	MIL-T-23594	TAPE, TEFLON	
AR	1012507	TAPE, LACING	
1	1010400	CLAMP, CABLE	
2	6008023	CLAMP, PSA CONNECTOR	
1		CONN, SIGNAL CONDITIONER OUTPUT	
2		COVER, SIGNAL CONDITIONER CONN.	
2		CLAMP, SIGNAL CONDITIONER CONN.	
2		CLAMP, LGC CONNECTOR	
ITEM NO.	NO. REQD	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION
LIST OF PARTS AND MATERIALS			

LIST OF PARTS AND MATERIALS

SEE NOTE 2

SEE NOTE 2
SEE NOTE 2

2	6008018	COVER, PSA CONNECTOR
1	6008009	CONNECTOR, PSA OUTPUT
1	6014506-015	WIRE, SINGLE COND, 12 ANG, VEL, 5 FT TOTAL LG
1	6014506-014	WIRE PER 1010789-019 35 FT. TOTAL LG
1	6014506-013	WIRE PER 1010789-018 55 FT. TOTAL LG
1	6014506-012	WIRE PER 1010789-017 250 FT. TOTAL LG
1	6014506-011	WIRE PER 1010789-016 700 FT. TOTAL LG
1	6014506-009	WIRE PER 1010789-012 25 FT. TOTAL LG
1	6014506-008	WIRE PER 1010789-009 25 FT. TOTAL LG
1	6014506-007	WIRE PER 1010789-008 200 FT. TOTAL LG
1	6014506-006	WIRE PER 1010789-006 50 FT. TOTAL LG
1	6014506-005	WIRE PER 1010789-005 10 FT. TOTAL LG
1	6014506-010	WIRE PER 1010789-015 500 FT. TOTAL LG
1	6014506-003	WIRE PER 1010789-003 45 FT. TOTAL LG
1	6014506-002	WIRE PER 1010789-002 235 FT. TOTAL LG
1	6014506-001	WIRE PER 1010789-001 10 FT. TOTAL LG
235	1010402-2	SLEEVE, SOLDER
		ADAPTER, POTTING MOLD
		ADAPTER, POTTING MOLD
3	1010958-3	PLUG, PROTECTIVE SEALING
7	1010958-2	PLUG, PROTECTIVE SEALING
201	1010958-1	PLUG, PROTECTIVE SEALING
12	1010964-1	CONTACT, PIN
31	1010964-2	CONTACT, SOCKET
255	1010770-1	CONTACT, PIN
401	1010770-2	CONTACT, SOCKET
1104	1010956-001	INSULATOR, MALE
1104	1010955-001	CONTACT, MALE
1	1010947-101	CONNECTOR, PLUG (P8)
1	1010947-116	(P11)
1	1010929-201	(P12)
1	1010929-101	(P5)
1	1010929-102	(P6)
1	1010929-103	(P7)
1	1010929-206	(P9)
1	1010929-202	(P10)
1	1010929-203	(P14)
1	1010929-204	CONNECTOR, PLUG (P13)

LIST OF PARTS AND MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		M I T INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNEU SPACECRAFT CENTER HOUSTON, TEXAS	
FRACTIONS	DECIMALS	ANGLES	DATE	23 MAY 1968	
+	+	+	CHECKED	23 MAY 1968	
-	-	-	APPROVAL	23 MAY 1968	
DO NOT SCALE THIS DRAWING		APPROVAL		23 MAY 1968	
MATERIAL		NASA APPROVAL		23 MAY 1968	
NEXT ASSY		CONTRACT		1159-497	
APPLICATION		M I T APPROVAL		23 MAY 1968	
6014515-011		6014515-011		CODE IDENT NO	
80230		D		6014506	
SCALE		1		SHEET 1 OF 1	

JOB TIME & WARNING CHECKS MYLAR TAPE

JDC 05774 REV. — PAGE 1 OF 1
 INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
 DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the TIME & WARNING CHECKS Program, JDC 05772.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC 05773
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

SUBSYSTEM Computer
DESCRIPTION ASSY. Block II - C Computer

Tests all locations in Erasable Memory Banks 0 and 1, including Registers A, L, Q, Z, CYR, SR, CYL, and EDOP. Banks 0 and 1 are tested with checkerboard patterns, moving ones and zeroes, and by loading each location with its own Bank number and address. The final test of this program utilizes a sequence of Machine Instructions to manipulate the Editing Registers to provide a unique test exercise.

Rev. Let.	Date	TDR NO.	PAGES REVISED JDC	D.S.	APPROVAL MIT	NASA	REFERENCES JDC's 05406, 05407, 05412, 05413, 05414 ND's 1021042, 1021043
							IMPORTANT
							INTERVAL As required
							TOOLS AND MATERIAL
							Program MEMCHECKS BANKS 0 AND 1 Mylar Tape, JDC 05776

PREPARATION

1. Perform the programmer and Monitor and Logic Drawer No. 2 Panel Preliminary Test Set-Up Procedure, JDC 05413.

2. Perform the XY and RDC Interface Panel Preliminary Test Set-Up Procedure, JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel.

3. Load Program MEMCHECKS BANKS 0 AND 1 (JDC 05776) into the Computer via the CTS using the procedures of JDC 05406 (Tape Load Operating Procedure).

NOTE: The procedures of this JDC are also shown in the Flowchart of Figure 1.

4. Rewind Tape.

5. Verify that the Program has been properly loaded into memory by performing JDC 05407, Tape Verify Operating Procedure.

6. Press the TAPE FREE RUN indicator switch to the off (extinguished) position.

OPERATION

7. Transfer Control Location 1174 using the procedures of JDC 05412 (Transfer Control Operating Procedure).

8. Set the register select switch to the L position.

9. Press the Monitor indicator switch to the on (illuminated) position.

VERIFICATION WITH SIDL REQUIRED BEFORE USE DATE _____

SUBSYSTEM Computer
ASSY

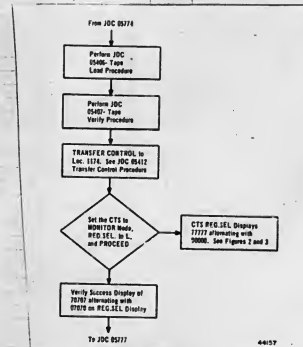


Figure 1. Flowchart for Performing Program MEMCHECKS BANKS 0 AND 1

DATE _____

SUBSYSTEM Computer
ASSY

10. Press the CL Key.

11. Set the T12 COUNTER STOP to the off position.

12. Press the PROCEED button.

13. Verify that the REG SEL display is 7070 alternating with 0700 indicating that this test has been successfully completed. Stamp data sheet and proceed to JDC 05777. If the REG SEL display is 7777 alternating with 0000 complete the remaining steps of this JDC.

14. Set the T12 COUNTER STOP to the on position.

15. Set the register select switch to the A position.

16. Read the contents of location 0061 using the procedures of JDC 05409. Read AGC Operating Procedure.

17. Compare the address read out with those specified on Figure 2 and 3. The address will be numerically within a specific group on a particular flowgram. (For example, an address read out of 1265 would pertain to the first flowgram of Figure 2. Test A, L, Q, and Z Registers.) Follow the instructions shown in the selected flowgram, and if the program fails to reach a successful conclusion discontinue further testing.

DATE _____

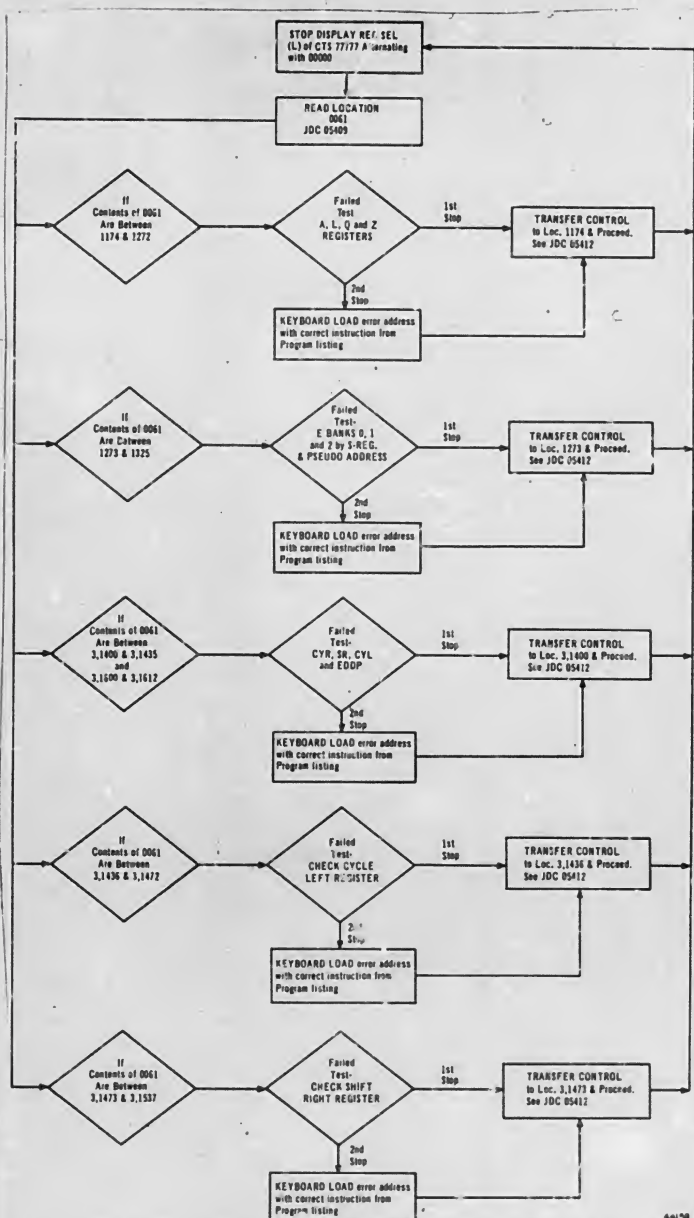


Figure 2. Stop Flowchart for Locations 1174-3, 1537

DATE

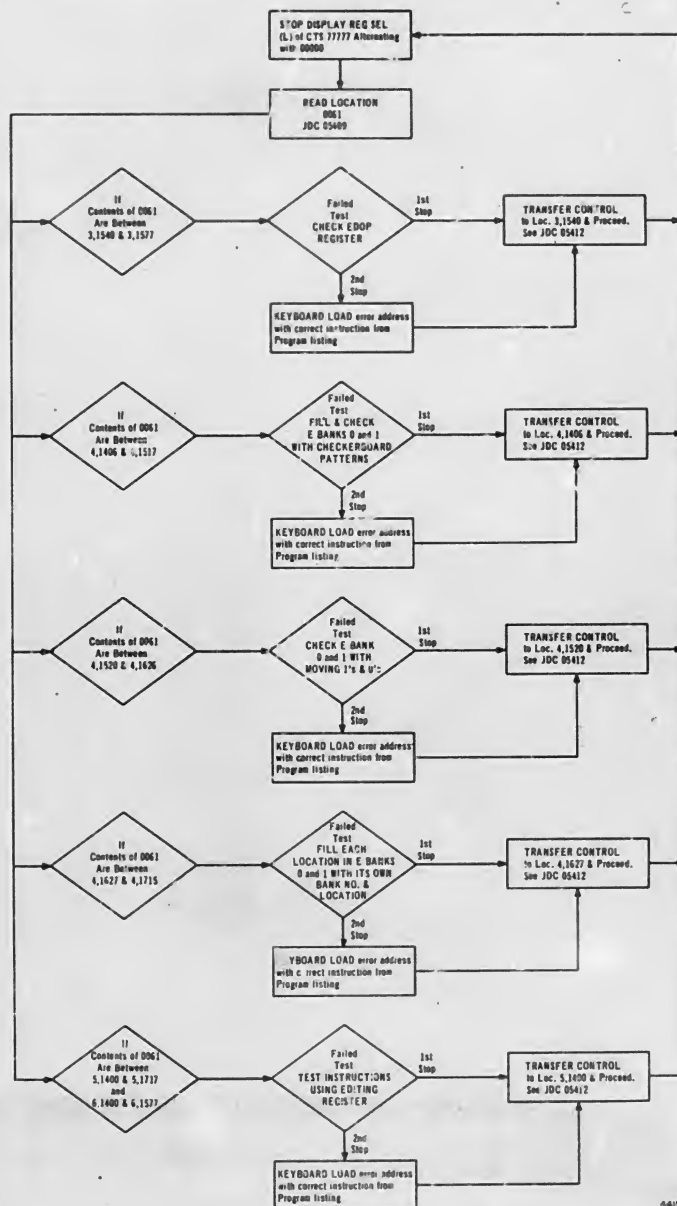


Figure 3. Stop Flowchart for Location 3, 1540-6, 1577

DATE

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 1 OF 1

NO. <u>05775</u> ^{JDC}
REV. <u>—</u>
INITIAL TDRR <u>32809</u>

JOB OPERATING PROCEDURE FOR (FVP) PROGRAM-MEMCHECKS BANKS 0 AND 1

<u>ASSEMBLY UNDER TEST</u>		<u>TEST HISTORY</u>	
TITLE _____	DATE _____	START _____	END _____
SER. NO. _____	DWG _____	TIME _____	SITE / LOCATION _____
REV. _____		START _____	END _____
			TOTAL ELAPSED _____
<u>MAJOR GROUND SUPPORT EQUIPMENT</u>			
NAME _____	SER. NO. _____	CAL DATE _____	
NAME _____	SER. NO. _____	CAL DATE _____	
CONDUCTED BY _____		APPROVED BY _____	
NAME/AFFILIATION _____		NAME/AFFILIATION _____	

<u>Step</u>	<u>Parameter</u>	<u>Specification</u>	<u>Results</u>
13	REG SEL displays success indication 70707 alternating with 07070	1111 000 111 000 111 alt. w/ 0000 111 000 111 000	

DATE _____
BY _____

JOB MEMCHECK BANKS 0 & 1 TEST MYLAR TAPE

JDC 05776 REV. PAGE 1 OF 1
 INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
 DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the MEMCHECK BANKS 0 & 1 Program, JDC 05774

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC 05775
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

JOB MEMCHECK BANKS 0 & 1 TEST MYLAR TAPE

JDC 05776 REV. PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the MEMCHECK BANKS 0 & 1 Program, JDC 05774

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC 05775
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND
							MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

OPERATING PROCEDURE FOR (FVP) PROGRAM
JOB MEMCHECKS BANKS 2 THRU 7 JDC 05777 REV PAGE 1 OF 4
INITIAL TORR 32809 DS PGS 1

SUBSYSTEM Computer ASSY. Block II - C Computer

DESCRIPTION
Tests all locations in Erasable Memory Banks 2 Thru 7. Banks 2 through 7 are tested with checkerboard patterns, moving ones and zeros, and by loading each location with its own Bank number and address.

Rev. Let.	Date	TORR No.	PAGES REVISED JDC D.S.	APPROVAL MIT NASA	REFERENCES
					JDC's 05406, 05507, 05412, 05413, 05414
					ND's 1021042, 1021043
					IMPORTANT
					INTERVAL As required
					TOOLS AND MATERIAL Program MEMCHECKS 2 THRU 7 Mylar Tape, JDC 05778

PREPARATION

1. Perform the Programmer and Monitor and Logic Drawer No. 2 Panel Preliminary Test Set-Up Procedure, JDC 05414.

2. Perform the XY and RDC Interface Panel Preliminary Test Set-Up Procedure, JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel.

3. Load Program MEMCHECKS BANKS 2 THRU 7 (JDC 05778) into the Computer via the CTS using the procedures of JDC 05406 (Tape Load Operating Procedure).

NOTE: The procedures of this JDC are also shown in the Flowchart of Figure 1.

4. Rewind Tape.

5. Verify that the Program has been properly loaded into memory by performing JDC 05407. Tape Verify Operating Procedure.

6. Press the TAPE FREE RUN indicator switch to the off (extinguished) position.

OPERATION

7. Transfer Control to Location 0152 using the procedures of JDC 05412 (Transfer Control Operating Procedure).

8. Set the register select switch to the L position.

9. Press the MONITOR indicator switch to the on (illuminated) position.

VERIFICATION WITH SIOL REQUIRED BEFORE USE

DATE

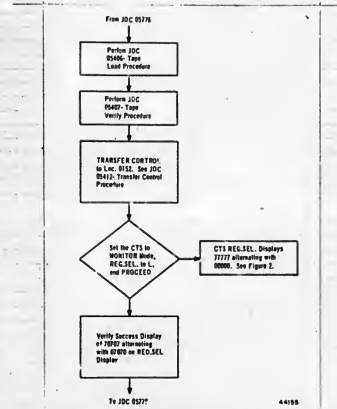


Figure 1. Flowchart for Performing Program MEMCHECKS BANKS 2 THRU 7

DATE

OPERATING PROCEDURE FOR (FVP)
JOB PROGRAM - MEMCHECKS BANKS 2 THRU 7 JDC 05777 REV PAGE 3 OF 4

SUBSYSTEM Computer ASSY

10. Press the CL Key.

11. Set the T12 COUNTER STOP to the off position.

12. Press the PROCEED button.

13. Verify that the REG SEL display is 70707 alternating with 07070 indicating that this test has been successfully completed. Stamp data sheet and proceed to JDC 05779. If the REG SEL display is 77777 alternating with 00000 complete the remaining steps of this JDC.

14. Set the T12 COUNTER STOP to the on position.

15. Set the register select switch to the A position.

16. Read the contents of location 0061 using the procedures of JDC 05409. Read AGC Operating Procedure.

17. Compare the address read out with those specified on Figure 2. The address will be numerically within a specific group on a particular flowgram. (For example, an address read out of 202 would pertain to the first flowgram of Figure 2, TEST EBANKS 2 THRU 7 WITH CHECKERBOARD PATTERNS). Follow the instructions shown in the selected flowgram, and if the program fails to reach a successful conclusion discontinue further testing.

SUBSYSTEM Computer ASSY

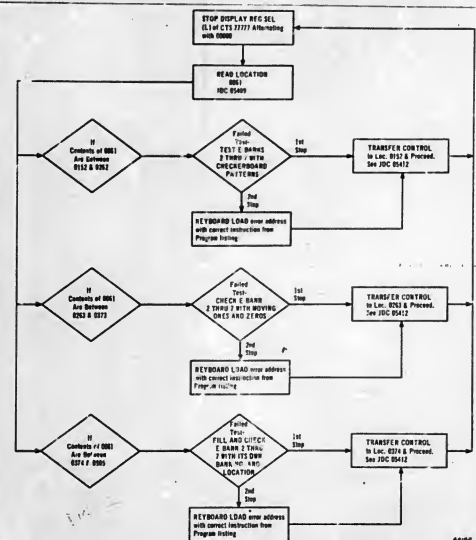


Figure 2. STOP Flowchart

DATE

**APOLLO G&N
EQUIPMENT TEST**

NO. 05777 JDC
REV. -
INITIAL TDRR 32809

JOB OPERATING PROCEDURE FOR (FVP) PROGRAM - MEMCHECKS BANKS 2 THRU 7

<u>ASSEMBLY UNDER TEST</u> TITLE _____ SER. NO. _____ DWG. _____ REV. _____	<u>TEST HISTORY</u> <table style="width: 100%;"> <tr> <td style="width: 33%;">DATE _____</td> <td style="width: 33%;">_____</td> <td style="width: 33%;">_____</td> </tr> <tr> <td style="text-align: center;">START</td> <td style="text-align: center;">END</td> <td style="text-align: center;">SITE / LOCATION</td> </tr> <tr> <td>TIME _____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td style="text-align: center;">START</td> <td style="text-align: center;">END</td> <td style="text-align: center;">TOTAL ELAPSED</td> </tr> </table>	DATE _____	_____	_____	START	END	SITE / LOCATION	TIME _____	_____	_____	START	END	TOTAL ELAPSED
DATE _____	_____	_____											
START	END	SITE / LOCATION											
TIME _____	_____	_____											
START	END	TOTAL ELAPSED											

MAJOR GROUND SUPPORT EQUIPMENT

NAME _____	SER. NO. _____	_____
		CAL DATE
NAME _____	SER. NO. _____	_____
		CAL DATE

CONDUCTED BY _____	APPROVED BY _____
NAME/AFFILIATION	NAME/AFFILIATION

<u>Step</u>	<u>Parameter</u>	<u>Specification</u>	<u>Results</u>
13	REC SEL displays success indicator 70707 alternating with 07070	1111 000 111 000 111 alt. w/ 0900 111 000 111 000	

DATE _____

JOB MEMCHECK BANKS 2 THRU 7
TEST MYLAR TAPE

JDC 05778 REV. — PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the MEMCHECK BANKS 2 THRU 7 Program, JDC 05776.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC 05777
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL As required
							TOOLS AND MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

JOB MEMCHECK BANKS 2 THRU 7
TEST MYLAR TAPE

JDC 05778 REV. — PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the MEMCHECK BANKS 2 THRU 7 Program, JDC 05776.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC 05777
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL As required
							TOOLS AND MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

SUBSYSTEM Computer ASSY. Block II - C Computer

DESCRIPTION Tests (Extracode) Channel Instructions RFAD, WRITE, RAND, ROR, RXOR, WAND, and WOR.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC's 05406, 05413, 05412, 05407, 05414
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL As required
							TOOLS AND MATERIAL Program CHANNEL INST. CHECKS Mylar Tape, JDC 05780

PREPARATION

1. Perform the Programmer and Monitor and Logic Drawer No. 2 Panel Preliminary Test Set-Up Procedure, JDC 05413.

2. Perform the XY and RDC Interface Panel Preliminary Test Set-Up Procedure, JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel.

3. Load Program CHANNEL INST. CHECKS (JDC 05780) into the Computer via the CTS using the procedures of JDC 05406 (Tape Load Operating Procedure).

NOTE: The procedures of this JDC are also shown in the Flowchart of Figure 1.

4. Rewind Tape.

5. Verify that the Program has been properly loaded into memory by performing JDC 05407, Tape Verify Operating Procedure.

6. Press the TAPE FREE RUN indicator switch to the off (extinguished) position.

OPERATION

7. Transfer Control to Location 0132 using the procedures of JDC 05412 (Transfer Control Operating Procedure).

8. Set the register select switch to the L position.

9. Press the MONITOR indicator switch to the on (illuminated) position.

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

SUBSYSTEM Computer ASSY

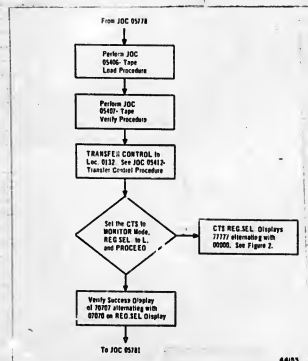


Figure 1. Flowchart for Performing Program CHANNEL INST. CHECKS

DATE _____

SUBSYSTEM Computer ASSY

10. Press the CL Key.

11. Set the T12 COUNTER STOP to the off position.

12. Press the PROCEED button.

13. Verify that the REG SEL display is 70707 alternating with 07070 indicating that this test has been successfully completed. Stamp data sheet and proceed to JDC 05781. If the REG SEL display is 77777 alternating with 00000 complete the remaining steps of this JDC.

14. Set the T12 COUNTER STOP to the on position.

15. Set the register select switch to the A position.

16. Read the contents of location 0061 using the procedures of JDC 05409. Read AGC Operating Procedure.

17. Compare the address read out with those specified on Figure 2. The address will be numerically within a specific group on a particular flowgram. For example, an address read out of 0207 would pertain to INSTRUCTION READ the first flowgram of Figure 2. Follow the instructions shown on the selected flowgram, and if the program fails to reach a successfully conclusion discontinue further testing.

DATE _____

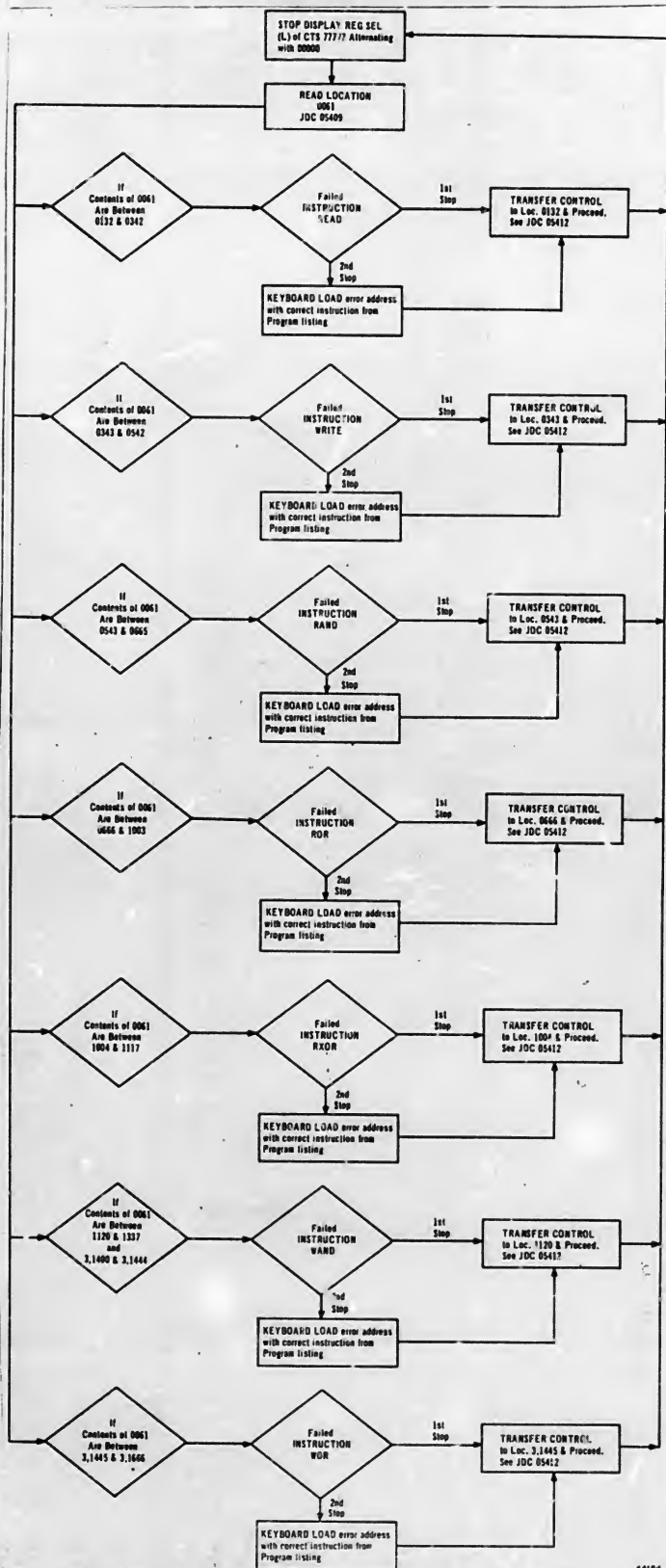


Figure 2. Stop Flowchart

DATE

APOLLO G&N
EQUIPMENT TEST

DATA SHEET 1 OF 1

JDC
NO. 05779
REV. —
INITIAL TDRR 32809

JOB OPERATING PROCEDURE FOR (FVP) PROGRAM-CHANNEL INST. CHECKS

<u>ASSEMBLY UNDER TEST</u>		<u>TEST HISTORY</u>	
TITLE _____		DATE _____	_____
SER. NO. _____ DWG _____ REV. _____		START	END
		TIME _____	SITE / LOCATION _____
		START	END
		TOTAL ELAPSED _____	
<u>MAJOR GROUND SUPPORT EQUIPMENT</u>			
NAME _____		SER. NO. _____	
		CAL DATE _____	
NAME _____		SER. NO. _____	
		CAL DATE _____	
CONDUCTED BY _____		APPROVED BY _____	
NAME/AFFILIATION		NAME/AFFILIATION	

<u>Step</u>	<u>Parameter</u>	<u>Specification</u>	<u>Results</u>
13	REG SEL displays success indication 70707 alternating with 07070	1111 000 111 000 111 alt. w/ 0000 111 000 111 000	

DATE _____

JDC 05780 REV. PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS 0

ASSY. Block II - C Computer

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	M	NASA	
							JDC 05779
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND MATERIAL

DATE _____

JOB CHANNEL INST. CHECKS MYLAR TAPE

JDC 05780 REV. 7 PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the CHANNEL INST. CHECKS Program, JDC 05778.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D. S.	MIT	NASA	
							JDC 05779
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND
							MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

The IN-OUT Program contains eight individual test routines, identified as STARTP, STPIP, and TEST 1 through TEST 6. The tests are performed sequentially starting with TEST 6, followed by TEST 1 through 5. STARTP, STPIP, and TEST 6 are provided under the Program Analysis section included at the end of this JDC. The sequence of testing is also shown in the Flowchart of Figure 1.

Rev. No.	Date	TDR	PAGES REVISED	NO.	D.S.	MIT	ASA	REFERENCES
A	10-20-67	31890	1,3	-	-	EA/2	-	JDC's 05406, 05407, 05412, 05413, 05414
B	3-22-68	35898	3	-	-	EA/2	-	ND's 1021042, 1021043
IMPORTANT: Do not attempt to perform this test until step 1 of this JDC has been verified.								
INTERVAL: As required								
TOOLS AND MATERIAL: Program IN-OUT CHECKS, Mylar Tape, JDC 05782								

PREPARATION

1. Connect test cable W263 to connectors J4, J5, J7, and J8 of the AGC-OC. Cable W263 is supplied as part of the SUBSYSTEM TEST INTERSECTION SET under the Part Number 2016314-011.
2. Perform the Programmer and Monitor and Logic Drawer No. 2 Panel Preliminary Test Set-Up Procedure, JDC 05412.
3. Perform the XY and RDC Interface Panel Preliminary Test Set-Up Procedure, JDC 35414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer, No. 2 panel.

4. Load Program IN-OUT CHECKS (JDC 05782) into the Computer via the CTS using the procedures of JDC 05406 (Tape Load Operating Procedure).
5. Rewind Tape.
6. Verify that the Program has been properly loaded into memory by performing JDC 05407 (Tape Verify Operating Procedure).
7. Press the TAPE FREE RUN indicator switch to the off (extinguished) position.
8. Press the CH33-10 indicator switch on the RDC INTERFACE Panel to the on (illuminated) position.

OPERATION

9. Transfer Control to E Bank 3, Location 1400 using the procedures of JDC 05412 (Transfer Control Operating Procedures).

VERIFICATION WITH SIDL REQUIRED BEFORE USE DATE 26 JAN 67

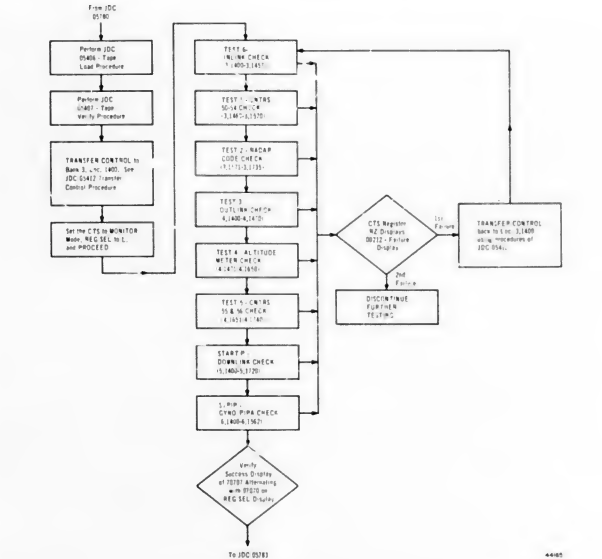


Figure 1. Flowchart for Performing Program IN-OUT CHECKS

DATE 26 JAN 67

10. Press the MONITOR indicator switch to the on (illuminated) position.
11. Press the CL Key.
12. Set the register select switch to position 1.
13. Set the INHIBIT INCREMENTS switch to the OFF position.
14. Set the T12 COUNTER STOP switch to the OFF position.
15. Press the PROCEED button.
16. No further operator control is required to complete the eight checks. Checks are performed sequentially under program control. The program will be automatically terminated in either a success display or a stop display. If the test is successful, Register L on the Programmer and Monitor Panel will display 70707 alternating with 07070. If the test fails to complete any one of the eight checks, Register Z will display the address 0212, and Register A will display the return address (to the main program).

If the test terminates in a failure, Transfer Control (using the procedures of JDC 05412) back to Location 3, 1400, and PROCEED. If the test fails again, discontinue further testing, and note the contents of Register A (return address). Compare this address with the address groups of each of the eight test sequences. The "failed" address should fall within one of these groupings. The specific test functions unable to be performed are determined by referencing the Program Analysis section for a description of the "failed" test.

17. Press the CH33-10 indicator switch on the RDC Interface Panel to the OFF (extinguished) position. After completion of this JDC, remove test cable W263 (Part No. 2016314-011) installed in step 1 and reconnect the cables that were removed from J4, J5, J7, and J8.

PROGRAM ANALYSIS

TEST 6 (Locations 3, 1400-3, 1457)

This test checks the decoding circuitry controlled by bits 5 and 6 of channel 13. Bits 5 and 6 are decoded to control information gated into the UPLINK counter (by way of the counter priority cells) from either of two sources, interface signals UPLINK or CROSSLINK. It also checks that the circuit used for detecting excessive rates of information flow from these two sources is operative. Excessive data rate is indicated by the INLINK TOO FAST bit of channel 33 when an excessive rate is detected. The INLINK TOO FAST function is tested by using bit 6 of channel 14 to generate signal GYENAB and making the interface connection such that GYENAB causes XLINK0. The frequency of GYENAB is approximately 102 KC. The test bit configurations are listed as follows:

Set Ch. 13 Bits 6 5	Set Ch. 14 Bit 6	In Ch. 33 Bit 11
0 0	1	1
1 0	1	1
1 1	1	1
0 1	1	0

The bits of channel 33 are inverted. Therefore bit 11 will be a one until the INLINK TOO FAST signal is present. In checks one through three Bit 5 of Channel 13 and Bit 10 of Channel 33 inhibit information from entering the counter priority cells via XLINK, therefore the excessive rate of XLINK0 is not detected. In check number four the states of Bits 5 and 6 of Channel 13 and Bit 10 of Channel 33 allows information to be gated into the INLINK circuitry via XLINK and at this time the excessive rate of XLINK0 is detected generating INLINK TOO FAST and setting Channel 33 Bit 11 to zero.

- TEST 1 (Locations 3, 1460-3, 1570)
- This test checks that OUT COUNTERS 50 through 54 are diminished by instruction DINC when the proper bit is written into Channel 14. This is accomplished by the wiring of test cable W263 which connects the interface signals generated by instruction DINC into circuits which request counter increments. See Table 1.
- Numbers are placed in Counters 50-54 in 1's complement. Results appear in Counters 32-36 in 2's complement form. The CDU-DP or M signals are generated until the contents of the OUT COUNTER are diminished to minus zero. At this time the channel bit which was requesting the DINC instruction is reset and checked.
- In this routine each counter pair, $32 + x$, $50 + x$ ($x = 0$ to $X = 4$) is tested separately. Four tests are performed on each pair with the expected results shown below. (Initially $32 + x$ is set to -30_{10}).

The following numbers are placed in $50 + x$.	The corresponding $32 + x$ values should become
$+30_{10}$	$+0$
-30_{10}	$+30_{10}$
-30_{10} (1's complement)	$+0$
-30_{10} (1's complement)	-30 (2's complement)

When performing a trial, after one of the above numbers is placed on $50 + x$ and its corresponding drive bit set, the program waits until the drive bit resets and then checks $32 + x$ for the expected result. In order to avoid an endless loop in the case of the drive bit not resetting, a time limiting loop has been incorporated. If the drive bit does not reset within the given time (approximately 10 msec) the test fails.

Table 1

Load Ch. 14 Bit	DINC OUTCTR	If Contents of OUTCTR is	Generate Interface Signal	This is Wired Into	Causes Counter Request
16/15	50	Positive	CDUXDP	CDUXP	PCDU 32
	50	Negative	C1UXDM	CDUXM	MCDU 32
14	51	Positive	CDUYDP	CDUYD	PCDU 33
	51	Negative	CDUYDM	CDUYM	MCDU 33
13	52	Positive	CDUZDP	CDUZP	PCDU 34
	52	Negative	CDUZDM	CDUZM	MCDU 34
12	53	Positive	TRNDP	TRND	PCDU 35
	53	Negative	TRNDP	TRND	MCDU 35
11	54	Positive	SHFTDP	SHAFTP	PCDU 36
	54	Negative	SHFTDM	SHAFTM	MCDU 36

DATE 26 JAN 67

DATE 26 JAN 67

SUBSYSTEM Computer

ASSY Block II - C Computer

TEST 2 (Locations 3, 1571-4, 1400)

This test checks the generation of the radar control codes associated with Bits 1 through 4 of Channel 13. This is accomplished by using the decoded radar signals to generate increment requests for BMAG counters 42, 43 and 44. Bit 8 of Channel 13 is tested also since the counter requests which are generated at the interface module pass through circuitry which is enabled by this bit position.

Events listed in Table 2 occur when a code is entered into the lower 4 Bits of Channel 13.

The radar signals are generated at a 3200 cycle/second rate for a period of 90 ms. This results in the generation of 256 pulses each time a code is entered into Channel 13. Initially, in this test, counters 42-44 are set to +0 and three tests are performed with each radar code and Bit 8 of Channel 13 set. In the case of codes 11, 14 and 16 the proper counter is initialized at -400. The first request should PINC the counter to -0. The second request with the same code should PINC the counter to +400. The counter is then re-initialized to 37777. After the next request, with the same code, it should read +377.

In the case of codes 12, 15 and 17, the proper counter is initialized at +400. The first request should MINC the counter to -0. The second request of the same code should MINC it to -377. It is then set to 40400. After the next request of the same code it should read 40000.

A test is performed with each radar code and Bit 8 of Channel 13 reset to ascertain that the counter accessed will not change in value. The program periodically checks that no counter has changed from +0 other than the one to which a request is sent. When bit 4 in Channel 13 is reset, the program knows that the proper counter should contain the expected value. A timing loop has been incorporated to prevent an endless loop from occurring in the event Bit 4 of Channel 13 was not reset. The no signal codes (10 and 13) are used to check that no signals are generated to any counter.

TEST 3 (Locations 4, 1400-4, 1470)

This test checks that Bit 1 of Channel 14 controls the OUTLINK circuitry and that this circuitry is operating properly. Bit 1 of Channel 14 generates a flag bit for the OUTLINK data which causes the computer to serially shift the 15 bits of OUTLINK data out of Counter 57. Each of the 16 bits

Table 2

Ch. 13 Code 4 3 2 1	Radar Signal Generated	Counter Request Generated	Type of Increment Requested	On CTR#
1 0 0 0	None	None	None	None
1 0 0 1	RR RANG	BMGXP	PINC	42
1 0 1 0	RR RANG	BMGXM	MINC	42
1 0 1 1	None	None	None	None
1 1 0 0	LR SVEL	BMGYP	PINC	43
1 1 0 1	LR SVEL	BMGYM	MINC	43
1 1 1 0	LR ZVEL	BMGZP	PINC	44
1 1 1 1	LR RANG	BMGZM	MINC	44

DATE 26 JAN 67

SUBSYSTEM Computer

ASSY Block II - C Computer

will generate either an OTLNK1 or OTLNK0 signal in the Interface Module depending on whether data bit was a "1" or a "0" respectively. These signals are then used to generate SHINC and SHANC instructions for the UPLINK counter.

OTLNK1 causes UPLINK1 which requests a SHANC on Counter 45.

OTLNK0 causes UPLINK0 which requests a SHINC on Counter 45.

This causes the data of Counter 57 to be duplicated in Counter 45.

Bits 5 and 6 of Channel 13 are also incorporated in this test since they control the inhibit or enable status of the UPLINK counter.

Four checks are performed here. They are -

- Set Channel 13 Bits 5 and 6 to 00.
 - Set Counter 57 to 25252, Counter 45=0, and Channel 14 Bit 1=1.
 - Wait a maximum of 10 ms for Channel 14 Bit 1 to reset. If it has not reset within this time, test fails.
 - Delay 5 more ms.
 - Check that Counter 45 now contains 25252. If not, Fail.
- Set Channel 13 Bits 6 and 5 to 10 (INHIBIT UPLINK).
 - Set Counter 57 to 25252, Counter 45=0 and Channel 14 Bit 1=1.
 - Wait a maximum of 10 ms for Channel 14 Bit 1 to reset. If it has not reset within this time, test fails.
 - Delay 5 more ms.
 - Check that Counter 45 still contains 0. If not, Fail.
- Same as 1 above except set CTR 57 to 52525 in step b, and expect 52525 in CTR 45 in step e.

4. Same as 2 above except set CTR 57 to 52525 in step b.

TEST 4 (Locations 4, 1471-4, 1650)

This test checks that Bits 2 and 3 of Channel 14 control the altitude meter circuitry and that this circuitry is operating properly. Bit 3 of Channel 14 generates a flag bit for the ALTITUDE METER data which causes the computer to serially shift the 15 data bits of ALTITUDE METER data out of Counter 60. Bit 2 selects the data transmission paths.

Bit 2	Data Bit	Transmit Via
0	0	ALTO
	1	ALTI
	0	ALRTO
1	1	ALRTI

The test wiring at the interface is such that -

ALTO causes RRINO,

ALTI causes RRINI,

ALRTO causes LRINO,

ALRTI causes LRINI,

The RR and LR signals will be converted to counter requests for SHINC and SHANC operations on Counter 46 when a radar code is loaded into Channel 13.

The test functions performed are listed in Table 3 below.

There are two checks made for each code listed for Channel 13. In the first check Counter 60 is loaded with an odd bit configuration, in the second check Counter 60 is loaded with an even bit configuration. The two results are then added and the answer checked for minus zero. Where no data is expected the answer is checked for positive zero.

DATE 26 JAN 67

SUBSYSTEM Computer

ASSY Block II - C Computer

Table 3

Load Ch. 14 Bits	Load Ch. 13 Bits	Data Expected in Counter 46
3 2 1 0	4 3 2 1 1 0 0 0 1 0 0 1 1 0 1 0 1 0 1 1	None Duplicate of Counter 60 Duplicate of Counter 60 Duplicate of Counter 60
1 1	1 0 0 0 1 1 0 0 1 1 0 1 1 1 1 0 1 1 1 1	None Duplicate of Counter 60 Duplicate of Counter 60 Duplicate of Counter 60 Duplicate of Counter 60

The second check tests for the generation of the flag bit from the ALTITUDE METER circuitry. This check consists of loading Counter 60 with a plus one and waiting until this bit has been shifted one place to the left. At this time Counter 46 is checked to see that it contains the same information.

TEST 5 (Locations 4, 1651-4, 1740)

This test checks that out Counter 55 and 56 are diminished by instruction DINC when the proper bit is written into Channel 14. This is accomplished by test wiring the interface signals generated during instruction DINC into circuits which request counter increments. The counter requests generated are listed in Table 4 below.

Bit 8 of Channel 13 is also used since it enables the counter requests to be gated into the counter cells.

Following is a list of tests actually performed.

- Write 1 into Channel 13 Bit 8.
- Zero CTR 42 (BMAGX), Zero CTR 43 (BMAGY).

- Deposit 00377 into CTR 55.
- Set Channel 14 Bits 5, 4 = 01.
- Wait until Channel 14 bit resets (100 ms is allowed).
- Does CTR 42 = 00377? If not, error.

- Same as a. except 77400 CTR 55 (step 2) and 77400 will be expected on CTR 42 (step b).

- Write 1 into Channel 13 Bit 8.
 - Zero CTR 42, Zero CTR 43.
 - Deposit 00377 into CTR 56.
 - Set Channel 14 Bits 5, 4 = 10.
 - Wait until Channel 14 bit resets (100 ms is allowed).
 - Does CTR 43 = 00377? If not, error.

- Same as c. except 77400 is deposited in CTR 56 (step 2) and 77400 will be expected on CTR 43 (step 6).

TEST STARTP (Locations 5, 1400-5, 1720)

This test is designed to check the decoding circuitry of Downlink Channels 34 and 35. The Downlink circuitry consists of Channels 34 and 35 (which contain the information to be transmitted), a 5-stage counter (whose

DATE 26 JAN 67

SUBSYSTEM Computer

ASSY Block II - C Computer

Table 4

Load Ch. 14 Bit	DINC OUTCTR	If Contents of OUTCTR is	Generate Interface Signal	This is Wired Into	Causes CTR Request
4	55	Positive	+THIRST	BMGXP	PINC 42
	55	Negative	-THIRST	BMGXM	MINC 42
5	56	Positive	+EMS	BMGYP	PINC 43
	56	Negative	-EMS	BMGYM	MINC 43

outputs are decoded to gate out one bit of information at a time), and signals DKBSNC, and DKSTRT. DKBSNC enables the output channels and causes the 5-stage counter to be "incremented." The other signal, DKSTRT, resets the 5-stage counter. Bit 7 of Channel 13, the "flag bit" for the Downlink data, is gated out by signal DKBSNC when the 5-stage counter is in the zero state. The outputs from the 5-stage counter are decoded and function as follows: stages 4 and 5 divide Channel's 34 and 35 into four 8 bit sections, stage 1, 2 and 3 are decoded to enable a single bit from an 8 bit section to be transmitted. Bit 16 is the first bit transmitted from a channel while the parity bit is the last bit transmitted. Channel 34 is transmitted before Channel 35.

Following is a list of interface connections used to generate the required Downlink signals.

GYRST causes DKSTRT which resets the 5-stage counter.

GYRSET causes DKBSNC which steps the counter which allows the Downlink output bits to be stored in Counter 45 (INLINK).

DKDATA causes XLINK1

GYRST and GYRSET are controlled by Bit 10 of Channel 14 and the contents of out Counter 47 GYRST. The number of times signal GYRSET is generated is determined by the contents of Counter 47. Signal GYRST is generated whenever GYRSET is not. Both occur at a frequency of 3200 cps.

Following is a list of checks performed within this test. The first Check below proves that only one of the four 8 bit sections is active and that it is the proper one.

C(34)	C(35)	* BITSYNCS Generated	C(45)
00177	77777	9	00000

The three checks below plus the first test of the next group are sufficient to prove that multiple decoding is not present within the eight bit section.

37600	77777	2	00000
17600	77777	3	00000
07600	77777	4	00000

The eight checks below prove that the lower 3 stages of the 5 stages are decoding properly and that each of eight states is capable of gating a data bit out of Channel 34.

40000	77777	5	00001
37600	77777	3	00001
17600	77777	4	00001

DATE 26 JAN 67

SUBSYSTEM	Computer	# BITSYNCS Generated	C(45)
C(34)	C(35)		
07600	77777	5	00001
03600	77777	6	00001
01600	77777	7	00001
00600	77777	8	00001
00200	77777	9	00001

The three checks below prove that the remaining three states of stages 4 and 5 are getting decoded properly and activate the proper 8 bit section.

*10000	77777	17	00000
10100	*10177	25	00000
10100	*10000	33	00000

The three checks below show that each of the bits within an 8 bit section is capable of being transmitted.

*40177	10000	17	00000
*40000	77800	25	00377
40000	*40177	33	00377

*The Input Counter 45 is inhibited until the position being interrogated is beyond this point.

The last check performed in this section sets Channel 34 and 35 to zero, sets Bit 7 of Channel 13 to a one and generates two BITSYNCS pulses. Counter 45 is checked for 1 pulse, if this test is successful Bit 7 of Channel 13 is functioning properly.

TEST STPIP (Locations 6, 1400-6, 1562)

This test checks the GYRO signals controlled by Channel 14, Bits 7 through 10, and the associated circuitry of PIPA Counters 37, 40 and 41.

The interface connections are listed in Table 5 below.

Ordinarily this signal pairing would not function properly, since the GYRO signals (occurring at a 102.4 KC rate) are gated by computer timing signal SB1, whereas the

PIPA counter increments are generated during SBZ time. The problem was solved by inverting the counter increment requests generated by the GYRO signals. Physically this was accomplished by wiring the high side of GYRO output transformer to the low side of the PIPA input transformer. Computer signal PIPSAM then converted the 102.4 KC GYRO signals to 3200 KC counter increment requests for the three PIPA counters.

The PIPA counter increment requests are controlled by a circuit which rejects the first three consecutive pulses of one type, i.e., the first three PINC requests or three MINC requests. In order to check that all of the above circuitry is functioning properly the following tests are made for each code which is entered into Channel 14.

a. Enter a code into Channel 14 which will pre-condition the PIPA circuits so that the first three counter increment requests generated by the test code will be rejected.

b. Enter the code to be tested into Channel 14.

c. When Bit 10 of Channel 14 gets reset, go check the counter which was to be incremented for the proper number of pulses.

d. Then check that the other two counters contain positive zero, that is, they did not receive any pulses.

e. The number of pulses gated out for each test is octal 103. The counter being tested is checked for octal 100.

f. In the case of the two illegal codes, all three counters are checked for positive zero.

The term pre-condition implies that if the code to be tested will cause PINCS on a counter, the code which MINCS the same counter will be used to set the PIPA rejection circuit to

DATE 26 JAN 67

a known state. Therefore the first three positive increment requests will be rejected. The reverse is also true when the MINC codes for each counter are tested.

Table 5

Load Ch. 14 10 9 8 7	Generate Signal	Causes Counter Request
1 0 0 0	None	None
1 0 0 1	GYXP	PINC 37
1 0 1 0	GYYP	PINC 40
1 0 1 1	GYZP	PINC 41
1 1 0 0	None	None
1 1 0 1	GYXM	MINC 37
1 1 1 0	GYYM	MINC 40
1 1 1 1	GYZM	MINC 41

DATE 26 JAN 67

APOLLO GEN
EQUIPMENT TEST
DATA SHEET 1 OF 1

JDC
NO. 05781
REV B
INITIAL TORR 32809

JOB OPERATING PROCEDURE FOR (FVP) PROGRAM IN-OUT CHECKS

ASSEMBLY UNDER TEST		TEST HISTORY	
TITLE		DATE START	END SITE / LOCATION
SER. NO.	DWG. REV.	TIME START	END TOTAL ELAPSED
MAJOR GROUND SUPPORT EQUIPMENT			
NAME	SER. NO.	CAL DATE	
NAME	SER. NO.	CAL DATE	
CONDUCTED BY		APPROVED BY	
NAME/AFFILIATION		NAME/AFFILIATION	

Step	Parameter	Specification	Results
16	REG SEL displays success indication 70707 alternating with 07070	111 000 111 000 111 alt. w/ 0000 111 000 111 000	

DATE 26 JAN 67

JOB IN-OUT CHECKS MYLAR TAPE

JDC 05782 REV. — PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS —

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II - C Computer

This JDC is a mylar tape used in conjunction with the Operating Procedures for the IN-OUT CHECKS Program, JDC 05780.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC 05781
							ND's 1021042, 1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND
							MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE _____

SUBSYSTEM Computer
DESCRIPTION ASSY, Block II - C Computer

Program ALLEREST contains three separate tests, the first of which tests the operation of Channels 30, 31, and 32. The next test checks the operation of the DSKY relays used to transmit signals to the spacecraft. The last test checks the operation of the DSKY indicators and Display Registers. It is recommended that the Program Analysis sections of this JDC be reviewed prior to testing.

Rev. Let.	Date	TDRR NO.	PAGES REVISED	APPROVAL	REFERENCES
A	9-7-67	34517	JDC 1, 10, 12-17	All	JDC's 05406, 05407, 05412, 05413, 05414
B	11-16-67	35057	3-10, 12, 15	EA	ND's 1021042, 1021043
C	5-22-68	35899	1, 12, 17	EA	IMPORTANT
D	10-17-68	36907	1, 3, 11, 14, 16, 17	EA	
E	1-20-69	37204	11	EA	INTERVAL As required
F	2-27-69	37374	1	E	
G	6-16-69	37647	4, 11, 13-17	EA	TOOLS AND MATERIAL Program ALLEREST
H	1-18-71	38310	13	JS	Mylar Tape, JDC 05784

PREPARATION

1. Perform the Programmer and Monitor and Logic Drawer No. 2 Panel Preliminary Test Set-Up Procedure, JDC 05413.

2. Perform the XY and RDC Interface Panel Preliminary Test Set-Up Procedure, JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel and the RDC Interface panel of the CTS.

3. Load PROGRAM ALLEREST (JDC 05784) into the Computer via the CTS using the procedures of JDC 05406 (Tape Load Operating Procedure).

NOTE: The procedures of this JDC are also shown in the Flowchart of Figure 1.

- Rewind Tape.
- Verify that the Program has been properly loaded into memory by performing JDC 05407, Tape Verify Operating Procedure.
- Press the TAPE FREE RUN indicator switch to the off (extinguished) position.

OPERATION

PROGRAM ANALYSIS - CHANNELS 30, 31, AND 32

The programmed functions of this portion of the test checks that 30, 31, and 32 receive DC signals in the proper bit positions via the interface module. Initially, the program verifies that

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE 26 JAN 67

SUBSYSTEM Computer
ASSY Block II - C Computer

all the bit positions of channels 30, 31 and 32 are de-energized. The program will:

- Turn on the COMPUTER ACTIVITY light;
- Blank the DSKY (PROGRAM, VERB, R1, R2, R3, PROGRAM ALARM, GIMBAL LOCK, TRACKER, NO ATTITUDE);
- Check to see that all the bit positions of channels 30, 31, and 32 are de-energized;
- and, if all bits are de-energized, turn off the COMPUTER ACTIVITY light.

Extinguishing of the COMPUTER ACTIVITY light signals the operator to start the switching sequence at the RDC interface panel, beginning with channel 30, bit 1 - ending with channel 32, bit 10.

At this point and throughout the remainder of the switching sequence the program looks for a switch to be energized. When the program detects an activation it enters a routine to determine that it was the proper switch, and checks the other two channels to make sure that they do not have bits present. If no discrepancies are noted during these checks, the computer will turn on the DSKY COMPUTER ACTIVITY light and register A will present a five second flashing display - all bits will flash except the one under test. At the end of this period the program will turn off the DSKY COMPUTER ACTIVITY light and register A goes back to normal program monitoring. Extinguishing of the COMPUTER ACTIVITY light signals the operator to de-energize the switch/bit just tested and energize the next switch/bit position.

When one channel has been completely tested, the test is continued by actuating switch/bit number one of the next channel. The last switch/bit energized in the sequence is channel 32, bit 10. The program will:

- Wait for the switch to be energized;

- Check the 60 second time limit;
- Check that the proper bit was energized;
- Check that bits in the other two channels are de-energized;
- Turn on the COMPUTER ACTIVITY light;
- Cause Register A to present a five second flashing display - all bits will flash except the one under test;
- Return Register A back to normal program monitoring;
- Turn off the COMPUTER ACTIVITY light;
- Check to see if the previous button is still on;
- Check the 60 second time limit, and
- Keeps checking to see if previous button is still on. When it is de-energized, the program will check for the next button to be energized, and it also keeps track of the 60 second time limit since the COMPUTER ACTIVITY light was turned off.
- When next button is energized, start with step (3) again until all bits in Channel 30, 31 and 32 are tested.

After Channel 32 bit 10 is tested, the program will switch to the success routine which will be displayed on Register L as 70707 alternating with 07070.

The DSKY indications used in this test and their interpretation are listed below:

NO ATTITUDE: Operator failed to energize the next test bit within one minute of completion of testing of last bit. Will notify operator of an energized bit not received by the computer (Register A will also not give 5 second display).

SUBSYSTEM Computer
ASSY Block II - C Computer

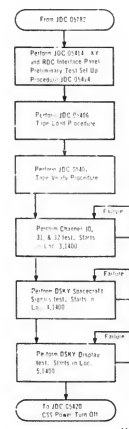


Figure 1. Flowchart for Performing Program ALLEREST

DATE 26 JAN 67

SUBSYSTEM Computer
ASSY Block II - C Computer

KEY RELEASE: Two adjacent switches are energized together for 30 seconds. This situation occurs when the operator energizes the switch to be tested before he de-energized the previous switch which was just checked.

OPERATOR ERROR: Hardware failure. Detection of an improper bit being energized in channel being tested. Detection of a bit in another channel being energized when correct bit in channel being tested is energized. Detection of a bit energized out of sequence in channel being tested.

Detection of an improper bit in Channel 30, 31 and 32 will be displayed on the DSKY as follows:

Verb - channel where error was detected.
 Register 1 - Octal display of Channel 30.
 Register 2 - Octal display of Channel 31.
 Register 3 - Octal display of Channel 32.

PROGRAM ALARM: Program Failure. Check contents of Register Q for location of program failure generation.

If any error condition occurs the operator transfers control back to location 3, 1400 and reruns the test again. If the error resulted from improper operation of the hardware under test, and a second error occurs, discontinue further testing.

7. Transfer Control to E Bank 3, Location 1400 using the procedures of JDC 05412 (Transfer Control Operating Procedure).

8. Press the MONITOR indicator switch to the on (illuminated) position.

9. Press the CL Key.

10. Set the T12 COUNTER STOP switch to the OFF position.

11. Set the INHIBIT INCREMENTS switch to the OFF position.

12. Press the PROCEED button.

13. Verify that the DSKY COMP ACTY indicator switches off

NOTE: CH30, 31, and 32 are alternate-action indicator switches which are illuminated in the energized position. To turn on any switch press to the illuminated position. To turn off any switch press to the extinguished position. Temp lamp ON (CH3015).

14. If an error condition occurs in any part of this test, perform steps 137 and 138.

15. Press CH30-1/IN0-1 to the on (illuminated) position.

16. Verify that the following displays occur:

a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.

DATE 26 JAN 67

DATE 26 JAN 67

OPERATING PROCEDURE FOR (FVP) PROGRAM-ALLEREST		JDC 05783 REV H PAGE 9 OF 17
SUBSYSTEM	Computer	ASSY Block II - C Computer
96. Press CH31-13/IN2-13 to the on position.		106. Verify that the following displays occur:
97. Verify that the following displays occur:		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.
a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.		b. Bit 1 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.
b. Bit 13 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		107. Press CH32-1/IN3-1 to the off position.
98. Press CH31-13/IN2-13 to the off position.		108. Press CH32-2/IN3-2 to the on position.
99. Press CH31-14/IN2-14 to the on position.		109. Verify that the following displays occur:
100. Verify that the following displays occur:		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.
a. DSKY COMP ACTY indicator is on for approximately five seconds and turns off.		b. Bit 2 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.
b. Bit 14 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		110. Press CH32-2/IN3-2 to the off position.
101. Press CH31-14/IN2-14 to the off position.		111. Press CH32-3/IN3-3 to the on position.
102. Press CH31-15/IN2-15 to the on position.		112. Verify that the following displays occur:
103. Verify that the following displays occur:		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.
a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.		b. Bit 3 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.
b. Bit 15 and 16 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		113. Press CH32-3/IN3-3 to the off position.
104. Press CH31-15/IN2-15 to the off position.		114. Press CH32-4/IN3-4 to the on position.
105. Press CH32-1/IN3-1 to the on position.		115. Verify that the following displays occur:
		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.

DATE 26 JAN 67

OPERATING PROCEDURE FOR (FVP) PROGRAM-ALLEREST		JDC 05783 REV H PAGE 10 OF 17
SUBSYSTEM	Computer	ASSY Block II - C Computer
b. Bit 4 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		126. Press CH32-8/IN3-8 to the on position.
116. Press CH32-4/IN3-4 to the off position.		127. Verify that the following displays occur:
117. Press CH32-5/IN3-5 to the on position.		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.
118. Verify that the following displays occur:		b. Bit 8 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.
a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.		128. Press CH32-8/IN3-8 to the off position.
b. Bit 5 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		129. Press CH32-9/IN3-9 to the on position.
119. Press CH32-5/IN3-5 to the off position.		130. Verify that the following displays occur:
120. Press CH32-6/IN3-6 to the on position.		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.
121. Verify that the following displays occur:		b. Bit 9 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.
a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.		131. Press CH32-9/IN3-9 to the off position.
b. Bit 6 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		132. Press CH32-10/IN3-10 to the on position.
122. Press CH32-6/IN3-6 to the off position.		133. Verify that the following displays occur:
123. Press CH32-7/IN3-7 to the on position.		a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.
124. Verify that the following displays occur:		b. Bit 10 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.
a. DSKY COMP ACTY indicator is on for approximately five seconds, and turns off.		134. Press CH32-10/IN3-10 to the off position.
b. Bit 7 of REG SEL register remains on, all other bits flash for approximately five seconds and then revert to normal program monitoring.		135. Set the register select switch to the L position.
125. Press CH32-7/IN3-7 to the off position.		

DATE 26 JAN 67

OPERATING PROCEDURE FOR (FVP) PROGRAM-ALLEREST		JDC 05783 REV H PAGE 11 OF 17
SUBSYSTEM	Computer	ASSY Block II - C Computer
136. Verify that the REG SEL display is 70707 alternating with 07070 indicating that this section of the test has been successfully completed. Stamp data sheet and proceed to step 139 of this JDC.		PROGRAM, TRACKER, GIMBAL LOCK, NO ATT, and, in those systems which contain the lights, ALT, VEL, and 2 SPARES.
137. Set the T12 COUNTER STOP switch to the on position.		2. Stores return address (Q) in 0112.
138. Starting with step 7, perform the procedures of this JDC again. If the failure occurs again discontinue further testing.		3. Writes PZ (positive zero) into Channels 12, 13, and 33.
PROGRAM ANALYSIS - DSKY SPACECRAFT SIGNALS		4. Reads and Masks Bit 14 of Channel 33 (WARNING light).
This program exercises the DSKY Relays which transmit discrete signals to the spacecraft. This section of the ALLEREST program is composed of 12 test exercises which activate certain DSKY Relays in turn producing a visual indication on the MAIN and NAV DSKY sections of the CTS Interface panel. Tests are performed incrementally with the program pausing at the conclusion of each test to signal the operator with the COMP ACTY light that it is waiting to perform the next test. The operator allows the next test to be performed by pressing Bit 1 of Channel 30 (RDC Interface) twice. Bit 1 of Channel 30 is an alternate action switch which is off initially. On the first actuation Bit 1 is turned on allowing the program to extinguish COMP ACTY. Then the program waits for the next (off) actuation of Bit 1. When Bit 1 is switched off the program will perform the next test. The first set of procedures described under 1 below are concerned with Initialization procedures.		5. Tests bit 14 for the off condition. If it is on, the program will turn on the OPERATOR ERROR light (Channel 11, Bit 7) to indicate to the operator that the AGC WARNING is set. The program will then go back and read Channel 33 again and check for bit 14 for the off condition. If the AGC WARNING is off, the program will load PZ into Channel 11 and continue the program.
1. Program Initialization Routine		6. Switches back to the return address as stored in 0112.
a. Turns on DSKY RESTART (Bit 10, Channel 11) light.		c. Loads PZ into the Index location (TESEI).
b. Switches to ALRMOFF (Location 1465) which in sequence performs the following:		d. Switches out to COMPON (location 1515) where it writes 00002 into Channel 11 turning on the COMP ACTY light.
1. Load 60000 into Channel 10, turning off DSKY indicators		The COMPON and ALRM OFF subroutines are used as integral portions of the test routine described below. The program procedures described under 2 are valid for any test being performed in this section with the only difference being the end result, i.e., the actual indicators illuminated on the DSKY and on the XY Interface panel of the CTS.
		2. Program Testing Routine
		a. Turn on COMP ACTY. Read Channel 30 and Mask with Bit one and test results with a CCS.

DATE 26 JAN 67

OPERATING PROCEDURE FOR (FVP) PROGRAM-ALLEREST		JDC 05783 REV H PAGE 12 OF 17
SUBSYSTEM	Computer	ASSY Block II - C Computer
b. If the operator has not pushed the button the program stays in a loop which continues to RDCH30 and test for the anticipated switch actuation.		139. Set the T12 COUNTER STOP switch to the ON position.
c. When the switch (Bit 1 CH30) is actuated the program switches to the ALRM OFF subroutine resetting the COMP ACTY light and again checks for AGC WARNING (Channel 33, Bit 14) off condition.		140. Transfer Control to E Bank 4, Location 1400 using the procedures of JDC 05412 (Transfer Control Operating Procedures).
d. The program then switches back to the main program and the next instruction is another RDCH30. Channel 30 is read and Masked with bit one and tested with another CCS instruction (at 1414), but this time the test is for a POSITIVE NON-ZERO accumulator, indicating that the operator has de-energized Bit of CH30.		141. Press RDC Interface switch CH30-15/IN0-15 to the on (illuminated) position. Verify TEMP alarm indicator on DSKY turns off.
e. The CCS instruction above switches the program to an Index (location 1542) instruction. The Index location (TESEI) in combination with the TC (to 1525) to the test table (TSTAB) instruction provides a switch which selects the next test (in sequence) from the table.		142. Press the MONITOR indicator switch to the on (illuminated) position.
f. TSTAB will switch the program into the proper test subroutine which will set up the DSKY Relay word to illuminate the specified indicators.		143. Press the CL Key.
g. After the indicators have been turned on the program will increment TESEI (Index) so that the next location in the test table will be selected after the operator repeats the on-off switching sequence of Bit 1 Channel 30. The program will loop back to (a) above and repeat (a) through (g) for the next test sequence		144. Set switches INHIBIT INCREMENTS and T12 COUNTER STOP to the OFF position.
There is no success display provided at the end of this particular section of the ALLEREST. The test will be completed successfully if all of the indicators and alarms specified in the steps below illuminate and extinguish in accordance with the procedure.		145. Press the PROCEED button, then the ALARM RESET button.
		146. When the COMP ACT light (after a delay of approximately 10 seconds) appears on either DSKY, verify the following:
		a. All lights are OFF in the MAIN DSKY section of the XY Interface Panel.
		b. All lights are OFF in the NAV DSKY section of the XY Interface Panel.
		c. All alarm lights on the DSKY are OFF.
		NOTE: RDC Interface switch CH30-1 is an alternate action indicator switch which is illuminated in the on state and extinguished in the off state. When performing any steps which require CH30-1 to be turned on and off, allow an approximate 3 second delay between switch actuations. Omit NAV DSKY railouts in the following steps if this procedure is being performed during LM CSS checkout.
		147. Press the CH30-1 on and then off.
		148. On either DSKY verify that the COMP ACTY light is ON.

DATE 26 JAN 67

SUBSYSTEM Computer	ASSY Block II - C Computer
149. On the XY Interface Panel verify that only the following lights are on in the DSKY sections: M37, M42, N25, and N30.	166. Press CH30-1 ON and verify that the lights of the two preceding steps go OFF.
150. Press CH30-1 ON and verify that the lights of the two preceding steps go OFF.	167. Press CH30-1 OFF.
151. Press CH30-1 OFF.	168. On either DSKY verify that the COMP ACTY light is ON.
152. On either DSKY verify that the COMP ACTY light is on.	169. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M31 and N21.
153. On the XY Interface Panel verify that only the following lights are on in the DSKY sections: M34 and N20.	170. Press CH30-1 ON and verify that the lights of the two preceding steps go OFF.
154. Press CH30-1 ON and verify that the lights of the two preceding steps go OFF.	171. Press CH30-1 OFF.
155. Press CH30-1 OFF.	172. On either DSKY verify that the COMP ACTY and TRACKER lights are ON.
156. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M36 and N19.	173. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M40 and N28.
157. On either DSKY verify that the COMP ACTY light is ON.	174. Press CH30-1 ON and verify the lights of the two preceding steps go OFF.
158. Press CH30-1 ON and verify that the lights of the two preceding steps go OFF.	175. Press CH30-1 OFF.
159. Press CH30-1 OFF.	176. On either DSKY verify that the COMP ACTY and PROGRAM lights are ON.
160. On either DSKY verify that the COMP ACTY light is ON and blank. If a LEM DSKY is being tested, verify that the ALT light is ON.	177. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M40 and N28.
161. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M41 and N29.	178. Press CH30-1 ON and verify the lights of the two preceding steps go OFF.
162. Press CH30-1 ON and verify that the lights of the two preceding steps go OFF.	179. Press CH30-1 OFF.
163. Press CH30-1 OFF.	180. On either DSKY verify that the COMP ACTY and TEMP lights are ON.
164. On either DSKY verify that the COMP ACTY and GIMBAL LOCK lights are ON.	181. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M40 and N28.
165. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M40 and N28.	182. Press CH30-1 ON and verify the lights of the two preceding steps go OFF.

DATE 26 JAN 67

SUBSYSTEM Computer	ASSY Block II - C Computer
183. Press CH30-15 and CH30-1 OFF.	NOTE: DSKY indicators listed below marked with * are applicable only for LM flight and LM flight spare DSKY's.
184. On either DSKY verify that the COMP ACTY and TEMP lights are ON.	a. Clears all DSKY Indicators and Display Registers.
185. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M40 and N28.	b. Lights DSKY Indicators one at a time in the order listed below:
186. Press CH30-15 and CH30-1 ON and verify that the lights of the two preceding steps go OFF.	1. UPLINK 7. TEMP
187. Press CH30-1 OFF.	*2. SPARE 8. GIMBAL LOCK
188. On either DSKY verify that the COMP ACTY, STBY and RESTART lights are ON.	*3. SPARE 9. PROG
189. On the XY Interface Panel verify that only the following lights are ON in the DSKY section: M32, M38, M39 and M40 N22, N26, N27 and N28.	*4. VEL 10. TRACKER
190. Press CH30-1 ON.	5. NO ATT *11. ALT
191. Press ALARM RESET.	6. KEY RELEASE 12. OPR ERR (Flashing)
192. When the COMP ACTY light goes OFF, verify that all lights on the DSKY section of the XY Interface Panel are OFF.	c. Lights DSKY Indicators RESTART and STBY together.
193. Press CH30-1 OFF.	d. Lights entire panel with KEY REL and OPR ERR flashing.
194. Set T12 and INHIBIT INCREMENT switches ON.	e. Turns on DSKY COMP ACTY indicator. (This indicator will remain on for the DSKY Register test.)
195. Stamp data sheet if the test was successfully completed. If a failure occurred during this test repeat all steps starting with step 140. If a second failure occurs, discontinue further testing.	f. Writes +00000 into DSKY Registers 1, 2, and 3 and flashes 00 in the VERB and NOUN displays and non-flashing 00 in the PROGRAM display.
PROGRAM ANALYSIS - DSKY DISPLAY	g. Writes -11111 into DSKY Registers 1, 2, and 3 and flashes 11 in the VERB and NOUN displays and non-flashing 11 in the PROGRAM display.
The DSKY Test is a fully automatic test routine which starts in Bank 5, Location 1400 and is applicable to both DSKY's. The sequence of program functions are performed in the order listed below.	h. Writes +22222 into DSKY Registers 1, 2, and 3 and flashes 22 in the VERB and NOUN displays and non-flashing 22 in the PROGRAM display.
	i. Writes -33333 into DSKY Registers 1, 2, and 3 and flashes 33 in the VERB and NOUN displays and non-flashing 33 in the PROGRAM display.

DATE 26 JAN 67

SUBSYSTEM Computer	ASSY Block II - C Computer
j. Writes +44444 into DSKY Registers 1, 2, and 3 and flashes 44 in the VERB and NOUN displays and non-flashing 44 in the PROGRAM display.	197. Press the MONITOR indicator switch to the on (illuminated) position and set the register select switch to the L position.
k. Writes -55555 into DSKY Registers 1, 2, and 3 and flashes 55 in the VERB and NOUN displays and non-flashing 55 in the PROGRAM display.	198. Press the CL Key.
l. Writes +66666 into DSKY Registers 1, 2, and 3 and flashes 66 in the VERB and NOUN displays and non-flashing 66 in the PROGRAM display.	199. Set the T12 COUNTER STOP switch to the OFF position.
m. Writes -77777 into DSKY Registers 1, 2, and 3 and flashes 77 in the VERB and NOUN displays and non-flashing 77 in the PROGRAM display.	200. Set the INHIBIT INCREMENTS switch to the OFF position.
n. Writes +88888 into DSKY Registers 1, 2, and 3 and flashes 88 in the VERB and NOUN displays and non-flashing 88 in the PROGRAM display.	201. Press the PROCEED button.
o. Writes -99999 into DSKY Registers 1, 2, and 3 and flashes 99 in the VERB and NOUN displays and non-flashing 99 in the PROGRAM display.	202. Verify that the DSKY UPLINK ACTY indicator turns on.
p. Displays 70707 alternating with 07070 on the REG SEL display (with register select switch set to L). This display will be presented for 15 seconds, after which time the entire test will automatically repeat. The T12 COUNTER STOP switch should be set to the ON position during this display, so that all DSKY displays will be in the clear condition at the conclusion of testing. Success or failure of this test is determined visually by the operator noting that all displays occur as specified.	NOTE: DSKY indicators listed below marked with * are applicable only for LM flight and LM flight spare DSKY's.
196. Transfer Control to E Bank 5, Location 1400 using the procedures of JDC 05412 (Transfer Control Operating Procedure).	203. Verify that DSKY indicator: UPLINK ACTY turns off *BLANK (SCREEN) turns on
	204. Verify that DSKY indicator: *BLANK (SCREEN) turns off *BLANK (SCREEN) turns on
	205. Verify that DSKY indicator: *BLANK (SCREEN) turns off *VEL turns on
	206. Verify that DSKY indicator: *VEL turns off NO ATT turns on
	207. Verify that DSKY indicator: NO ATT turns off KEY REL turns on and is flashing
	208. Verify that DSKY indicator: KEY REL turns off TEMP turns on
	209. Verify that DSKY indicator: TEMP turns off GIMBAL LOCK turns on

DATE 26 JAN 67

SUBSYSTEM Computer	ASSY Block II - C Computer
210. Verify that DSKY indicator: GIMBAL LOCK turns off PROG turns on	219. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = +44444 Register 2 = +22222 Register 3 = +22222 VERB = 22 (Flashing) NOUN = 22 (Flashing) PROGRAM = 22
211. Verify that DSKY indicator: PROG turns off TRACKER turns on	220. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = -3.333 Register 2 = -33333 Register 3 = -33333 VERB = 33 (Flashing) NOUN = 33 (Flashing) PROGRAM = 33
212. Verify that DSKY indicator: TRACKER turns off *ALT turns on	221. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = +44444 Register 2 = +44444 Register 3 = +44444 VERB = 44 (Flashing) NOUN = 44 (Flashing) PROGRAM = 44
213. Verify that DSKY indicator: *ALT turns off OPR ERR turns on and is flashing	222. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = -55555 Register 2 = -55555 Register 3 = -55555 VERB = 55 (Flashing) NOUN = 55 (Flashing) PROGRAM = 55
214. Verify that DSKY indicator: OPR ERR turns off RESTART and STBY turn on together	223. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = +66666 Register 2 = +66666 Register 3 = +66666 VERB = 66 (Flashing) NOUN = 66 (Flashing) PROGRAM = 66
215. Verify that all of the DSKY indicators mentioned above, are on with the KEY REL and OPR ERR indicators flashing.	
216. Verify that the DSKY COMP ACTY indicator turns on. This indicator should remain on for the rest of the test.	
217. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = +00000 Register 2 = +00000 Register 3 = +00000 VERB = 00 (Flashing) NOUN = 00 (Flashing) PROGRAM = 00	
218. Verify that the DSKY VERB, NOUN, and Registers display: Register 1 = -11111 Register 2 = -11111 Register 3 = -11111 VERB = 11 (Flashing) NOUN = 11 (Flashing) PROGRAM = 11	

DATE 26 JAN 67

224. Verify that the DSKY VERB, NOUN, and Registers display:

Register 1 = -77777
Register 2 = -77777
Register 3 = -77777
VERB = 77 (Flashing)
NOUN = 77 (Flashing)
PROGRAM = 77

225. Verify that the DSKY VERB, NOUN, and Registers display:

Register 1 = +88888
Register 2 = +88888
Register 3 = +88888
VERB = 88 (Flashing)
NOUN = 88 (Flashing)
PROGRAM = 88

226. Verify that the DSKY VERB, NOUN, and Registers display:

Register 1 = -99999
Register 2 = -99999
Register 3 = -99999
VERB = 99 (Flashing)
NOUN = 99 (Flashing)
PROGRAM = 99

227. Verify that the DSKY display is clear, and the REG SEL display is 70707 alternating with 07070. Set the T12 COUNTER STOP switch to the ON position immediately after verifying the REG SEL display. If a failure was observed during this test, do not turn ON the T12 COUNTER STOP switch. Allow the test program to recycle twice, and if the malfunction is still present, discontinue further testing. Stop the computer coincident with the REG SEL display, as described above.

228. Set the INHIBIT INCREMENT switch to the ON position.

229. Press the FRESH START button. Verify RESTART alarm indicator on DSKY turns on. Stamp data sheet if test was successful.

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 1 OF 1

NO. 05783	JDC
REV. II	
INITIAL	TDRR 32809

JOB OPERATING PROCEDURE FOR (FVP) PROGRAM-ALLEREST

<u>ASSEMBLY UNDER TEST</u>		<u>TEST HISTORY</u>	
TITLE _____		DATE _____	SITE / LOCATION _____
SER. NO. _____	DWG. _____ REV. _____	TIME _____	TOTAL ELAPSED _____
<u>MAJOR GROUND SUPPORT EQUIPMENT</u>			
NAME _____		SER. NO. _____	CAL. DATE _____
NAME _____		SER. NO. _____	CAL. DATE _____
CONDUCTED BY _____		APPROVED BY _____	
NAME/AFFILIATION _____		NAME/AFFILIATION _____	

Step	Parameter	Specification	Results
136.	Channels 30, 31, and 32 test (steps 7 through 136) completed successfully.		
195.	DSKY Spacecraft Signals (steps 139 through 195) completed successfully.		
226.	DSKY Display test (steps 196 through 225) completed successfully.		

DATE 26 JAN 67

DATE 26 JAN 67

JOB ALLEREST MYLAR TAPE

JDC 05784 REV. A PAGE 1 OF 1
INITIAL TDRR 32809 D.S. PGS 0

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II - C Computer

JDC 05784 Revision 0 is a mylar tape used in conjunction with the Operating Procedures for the ALLEREST Program, JDC 05783.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D. S.	MIT	NASA	
A	12-14-67	35239	All	-	EA 93	-	JDC 05783 ND's 1021042, 1021043
							IMPORTANT
							INTERVAL As required
							TOOLS AND MATERIAL

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE 26 JAN 67

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 3 OF 6

JOB CLOCK STABILITY TEST

JDC
NO. 05785
REV

Step	Parameter	Specification	Results
14.	Digital Ohmmeter Indication	None	
15.	Date	None	
	Time	None	

FOURTH RECORDING

7.	Digital Ohmmeter Indication	None	
8.	Oscillator Temperature	As specified by oscillator temperature-resistance curve	
9.	Frequency	$F = 2 (1,000,000.00 + \text{Printed Frequency})$	
10.	Aging Factor Calculation	0.0035 pps/day from date of graph	
11.	Frequency Deviation	Within 0.10 pps (plus aging factor) of oscillator temperature-frequency curve	
14.	Digital Ohmmeter Indication	None	
15.	Date	None	
	Time	None	

FIFTH RECORDING

7.	Digital Ohmmeter Indication	None	
8.	Oscillator Temperature	As specified by oscillator temperature-resistance curve	
9.	Frequency	$F = 2 (1,000,000.00 + \text{Printed Frequency})$	

DATE

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 4 OF 6

JOB CLOCK STABILITY TEST

JDC
NO. 05785
REV

Step	Parameter	Specification	Results
10.	Aging Factor Calculation	0.0035 pps/day from date of graph	
11.	Frequency Deviation	Within 0.10 pps (plus aging factor) of oscillator temperature-frequency curve	

14.	Digital Ohmmeter Indication	None	
15.	Date	None	
	Time	None	

SIXTH RECORDING

7.	Digital Ohmmeter Indication	None	
8.	Oscillator Temperature	As specified by oscillator temperature-resistance curve	
9.	Frequency	$F = 2 (1,000,000.00 + \text{Printed Frequency})$	
10.	Aging Factor Calculation	0.0035 pps/day from date of graph	
11.	Frequency Deviation	Within 0.10 pps (plus aging factor) of oscillator temperature-frequency curve	
14.	Digital Ohmmeter Indication	None	
15.	Date	None	
	Time	None	

DATE

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 5 OF 5

JOB CLOCK STABILITY TEST

JDC
NO. 05785
REV

Step	Parameter	Specification	Results
SEVENTH RECORDING			
7.	Digital Ohmmeter Indication	None	
8.	Oscillator Temperature	As specified by oscillator temperature-resistance curve	
9.	Frequency	$F = 2 (1,000,000.00 + \text{Printed Frequency})$	
10.	Aging Factor Calculation	0.0035 pps/day from date of graph	
11.	Frequency Deviation	Within 0.10 pps (plus aging factor) of oscillator temperature-frequency curve	
14.	Digital Ohmmeter Indication	None	
15.	Date	None	
	Time	None	

DATE

SUBSYSTEM Computer ASSY. Block II-C Computer

DESCRIPTION Provides procedures for checking the following radar functions:

- The operation of Channel 13
- Pulse and phase characteristics of rendezvous and landing radar signals
- The operation of the Radar Counter (EMA 0-46) with low one and high zero marginal input pulse levels.

Rev. Let.	Date	TDPR NO.	PAGES REVISED	APPROVAL	REFERENCES
			JDC D.S.	MIT NASA	JDC's 05413, 05414, 05123, ND-1021042, and ND-1021043
A	5-3-68	36182	2, 3, 7, 10	1	EA 80
B	10-17-68	36908	3, 7-10, 12	-	EA 92
C	12-30-68	37167	3, 11	-	EA 12
D	2-22-69	37361	3, 7, 10	-	EA 12
					IMPORTANT
					INTERVAL As required
					TOOLS AND MATERIAL

PREPARATION

1. Verify that the Programmer and Monitor and Logic Drawer No. 2 Panels are set-up as specified in JDC 05413.

2. Verify that the XY and RDC Interface Panels are set up as specified in JDC 05414.

NOTE: Unless otherwise specified, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, Logic Drawer No. 2 panel, and XY Interface Panel of the CTS.

CHANNEL 13 CHECK

3. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

4. Press Keys CL, 00013, 42525.

5. Verify that the RZ display is 0000 000 000 001 011.

6. Verify that the REG SEL display is 0100 010 010 010 101.

7. Press the CHANNEL button.

8. Press the EXECUTE button.

9. Verify that the LINC indicator is on.

10. Press the READ-AGC indicator switch to the on (illuminated) position.

11. Press Keys CL, 0013.

12. Verify that the RZ display is 0000 000 000 001 011.

13. Press the CHANNEL button.

14. Press the EXECUTE button.

VERIFICATION WITH SIOL REQUIRED BEFORE USE DATE 18 JAN 68

SUBSYSTEM Computer ASSY Block II-C Computer

15. Verify that the OINC and LINC indicators are on.

16. Verify that the PEG SEL display is 1100 010 001 010 101. Stamp data sheet.

17. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

18. Press Keys CL, 00013, 01252.

19. Verify that the RZ display is 0000 000 000 001 011.

20. Verify that the REG SEL display is 0000 001 010 101 010.

21. Press the CHANNEL button.

22. Press the EXECUTE button.

23. Verify that the OINC and LINC indicators are on.

24. Press the READ-AGC indicator switch to the on (illuminated) position.

25. Press Keys CL, 0013.

26. Verify that the RZ display is 0000 000 000 001 011.

27. Press the CHANNEL button.

28. Press the EXECUTE button.

29. Verify that the OINC and LINC indicators are on.

30. Verify that the REG SEL display is 0000 001 010 101 010. Stamp data sheet.

31. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

32. Press Keys CL, 00013, 00000.

33. Verify that the RZ display is 0000 000 000 001 011.

34. Verify that the REG SEL display is 0000 000 000 000 000.

35. Press the CHANNEL button.

36. Press the EXECUTE button.

37. Verify that the OINC and LINC indicators are on.

38. Press the READ-AGC indicator switch to the on (illuminated) position.

39. Press Keys CL, 0013.

40. Verify that the RZ display is 0000 000 000 001 011.

41. Press the CHANNEL button.

42. Press the EXECUTE button.

43. Verify that the OINC and LINC indicators are on.

44. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

45. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

46. Press Keys CL, 00013, 43777.

47. Verify that the RZ display is 0000 011 111 111 111.

48. Verify that the REG SEL display is 0100 011 111 111 111.

49. Press the CHANNEL button.

50. Press the EXECUTE button.

51. Verify that the OINC and LINC indicators are on.

52. Press the READ-AGC indicator switch to the on (illuminated) position.

53. Press Keys CL, 0013.

54. Verify that the RZ display is 0000 000 000 001 011.

55. Press the CHANNEL button.

56. Press the EXECUTE button.

DATE 18 JAN 68

SUBSYSTEM Computer ASSY Block II-C Computer

57. Verify that the OINC and LINC indicators are on.

57a. Verify STANDBY and RESTART on the DSKY are ON.

58. Verify that the REG SEL display is 1100 011 011 111 111. Stamp data sheet.

59. Press FRESH START.

60. Verify STANDBY on the DSKY is out; press RESET on the DSKY and verify RESTART goes out.

61. Press Keys CL, 0013.

62. Verify that the RZ display is 0000 000 000 001 011.

63. Press the CHANNEL button.

64. Press the EXECUTE button.

65. Verify that the OINC indicator is on.

66. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

RADAR COUNTERS OUTPUT SIGNAL MEASUREMENT

PREPARATION

67. Verify signal cabling between XY Interface Panel and the Oscilloscope per JDC 05415, step 4

68. Assure that the STRT1/STRT2 switch on the Buffer Circuit Assembly is set to the ON position.

69. Press the LOAD CHAN S 510 OHMS pushbutton indicator to the on or illuminated state.

70. Press the LOAD CHAN T 510 OHMS pushbutton indicator to the on or illuminated state.

NOTE: Unless specified otherwise, the Oscilloscope and Frequency Counter used to perform this test are to be operated as specified in the applicable JDC (05400 through 05405).

SIGNALS XA041 and XA047

71. Press the KEYBOARD LOAD pushbutton indicator to the on (or illuminated) position.

72. Press the CL Key.

73. Press Keys 00100, 00011.

74. Press EXECUTE.

75. Press Keys CL, 00101, 30100.

76. Press the EXECUTE button.

77. Press Keys CL, 00102, 00006.

78. Press the EXECUTE button.

79. Press Keys CL, 00103, 01013.

80. Press the EXECUTE button.

81. Press Keys CL, 00104, 00104.

82. Press the EXECUTE button.

83. Set the CHANNEL S switches to position 313.

84. Set the FREQ + PHASE switch to the FRS S - T position.

85. Set the Frequency Counter switches as follows: FUNCTION switch to COUNT A, GATE switch to OPEN, FREQ A SLOPE switch to "-". Adjust INPUT VOLTS RMS switches and TRIGGER LEVEL controls as necessary.

SUBSYSTEM Computer ASSY Block II-C Computer

NOTE: If counter reading verifications in the forthcoming steps do not read correctly where specified, readjust the INPUT VOLTS RMS switches and/or TRIGGER LEVEL controls as required and repeat preceding steps in that section that causes the counter to update until correct reading can be obtained.

86. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.

87. Press Keys CL, 0101.

88. Press the EXECUTE button.

89. Set the T12 COUNTER STOP switch to the OFF position.

90. Press the MONITOR indicator switch to the on (illuminated) position.

91. Press the Frequency Counter RESET button.

92. Press the PROCEED button.

93. Verify a display of 15 on the Frequency Counter. Record on data sheet.

94. Set the T12 COUNTER STOP switch to the ON position.

95. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.

96. Press Keys CL, 0101.

97. Press the EXECUTE button.

98. Set the T12 COUNTER STOP to the OFF position.

99. Press the MONITOR indicator switch to the on (illuminated) position.

100. Set the CHANNEL T switch to position 215.

101. Set the FREQ + PHASE switch to the FRT T - S position.

102. Press the RESET button on the Frequency Counter.

103. Press the PROCEED button.

104. Verify a display of 256 on the Frequency Counter. Record on data sheet.

SIGNAL XA042

105. Set the T12 COUNTER STOP switch to the ON position.

106. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

107. Press Keys CL, 00100, 00012.

108. Press the EXECUTE button.

109. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.

110. Press Keys CL, 0101.

111. Press the EXECUTE button.

112. Set the T12 COUNTER STOP switch to the OFF position.

113. Press the MONITOR indicator switch to the on (illuminated) position.

114. Set the CHANNEL T switches to position 216.

115. Press the RESET button on the Frequency Counter.

116. Press the PROCEED button.

117. Verify a display of 256 on the Frequency Counter. Record on data sheet.

SIGNALS XA051 AND XA043

118. Set the T12 COUNTER STOP switch to the ON position.

DATE 18 JAN 68

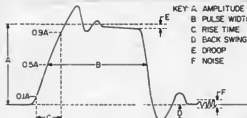
DATE 18 JAN 68

SUBSYSTEM Computer	ASSY Block II-C Computer
119. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	123. Set the T12 COUNTER STOP switch to the OFF position.
120. Press Keys CL, 00100, 00014.	139. Press the MONITOR indicator switch to the on (illuminated) position.
121. Press the EXECUTE button.	140. Press the RESET button on the Frequency Counter.
122. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	141. Press the PROCEED button.
123. Press Keys CL, 0101.	142. Verify a display of 256 on the Frequency Counter. Record on data sheet.
124. Press the EXECUTE button.	SIGNAL XA044
125. Set the T12 COUNTER STOP switch to the OFF position.	143. Set the T12 COUNTER STOP switch to the ON position.
126. Press the MONITOR indicator switch to the on (illuminated) position.	144. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
127. Set the CHANNEL S switches to position 314.	145. Press Keys CL, 00100, 00015.
128. Set the CHANNEL T switches to position 217.	146. Press the EXECUTE button.
129. Set the FREQ + PHASE switch to the FRS S - T position.	147. Set the CHANNEL T switches for position 218.
130. Press the RESET button on the Frequency Counter.	148. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.
131. Press the PROCEED button.	149. Press Keys CL, 0101.
132. Verify a display of 15 on the Frequency Counter. Record on data sheet.	150. Press the EXECUTE button.
133. Set the T12 COUNTER STOP switch to the ON position.	151. Set the T12 COUNTER STOP switch to the OFF position.
134. Set the FREQ + PHASE switch to the FRT T - S position.	152. Press the MONITOR indicator switch to the on (illuminated) position.
135. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	153. Press the RESET button on the Frequency Counter.
136. Press Keys CL, 0101.	154. Press the PROCEED button.
137. Press the EXECUTE button.	155. Verify a display of 256 on the Frequency Counter. Record on data sheet.

DATE 18 JAN 68

SUBSYSTEM Computer	ASSY Block II C-Computer
SIGNAL XA045	173. Set the CHANNEL T switches for position 220.
156. Set the T12 COUNTER STOP switch to the ON position.	174. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.
157. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	175. Press Keys CL, 0101.
158. Press Keys CL, 00100, 00016.	176. Press the EXECUTE button.
159. Press the EXECUTE button.	177. Set the T12 COUNTER STOP switch to the OFF position.
160. Set the CHANNEL T switches for position 219.	178. Press the MONITOR indicator switch to the on (illuminated) position.
161. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	179. Press the RESET button on the Frequency Counter.
162. Press Keys CL, 0101.	180. Press the PROCEED button.
163. Press the EXECUTE button.	181. Verify a display of 256 on the Frequency Counter. Record on data sheet.
164. Set the T12 COUNTER STOP switch to the OFF position.	182. Set the T12 COUNTER STOP switch to the ON position.
165. Press the MONITOR indicator switch to the on (illuminated) position.	PULSE CHARACTERISTICS OF SIGNALS XA041 AND XA047
166. Press the RESET button on the Frequency Counter.	183. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
167. Press the PROCEED button.	184. Press Keys CL, 00100, 00011.
168. Verify a display of 256 on the Frequency Counter. Record on data sheet.	185. Press the EXECUTE button.
SIGNAL XA046	186. Press Keys CL, 00104, 00101.
169. Set the T12 COUNTER STOP switch to the ON position.	187. Press the EXECUTE button.
170. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	188. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.
171. Press Keys CL, 00100, 00017.	189. Press Keys CL, 0101.
172. Press the EXECUTE button.	190. Press the EXECUTE button.

DATE 18 JAN 68

SUBSYSTEM Computer	ASSY Block II-C Computer
191. Set the T12 COUNTER STOP switch to the OFF position.	b. Set TIME/CM to 10 msec.
192. Press the MONITOR indicator switch to the on (illuminated) position.	c. Display Logic to NORM.
193. Set the FREQ + PHASE switch to the OFF position.	d. Mode switch to ALT.
194. Set the SCOPE switch to position DIFF T.	203. Use the X5 or X10 Magnifier to measure and record the time delay from the last pulse on CHANNEL T to the first pulse on CHANNEL S.
195. Set the CHANNEL T switches for position 215.	204. Set the CHANNEL S switches to position 113.
196. Set Oscilloscope MODE switch to A + B. Press the PROCEED button.	205. Set the FREQ + PHASE switch to position FRT T - S.
197. Measure and record the pulse characteristic specified in Figure 1.	206. Set the Frequency Counter switches as follows; the FUNCTION switch to TIME A -> B, the GATE switch to AUTO, the FREQ A SLOPE switch to "H", the STOP SLOPE to "H" and the FREQ-TIME to 0.1 usec position. Adjust stop B trigger level as required.
 <p>NOTE: Slight jitter may be observed on oscilloscope display during pulse measurements. This condition should not be interpreted as indicating a defective interface channel.</p> <p>Figure 1</p>	207. Measure and record the time delay from the falling edge of CNTR-A signal to the rising edge of the CNTR-B signal.
	208. Set the CHANNEL T switches to position 313.
198. Set the CHANNEL S switches for position 313.	209. Set the CHANNEL S switches for position 112. Measure and record the time delay from the falling edge of CNTR-A signal and the rising edge of the CNTR-B signal.
199. Set the SCOPE switch to position DIFF S.	PULSE CHARACTERISTICS OF SIGNAL XA042
200. Measure and record the pulse characteristics specified in Figure 1.	210. Set the T12 COUNTER STOP switch to the ON position.
201. Set the SCOPE switch to position ALTERNATE S - T.	211. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
202. Adjust the Oscilloscope as follows:	212. Press Keys CL, 00100, 00012.
a. Provide an external sync from channel A to the NORMAL AND DELAYING TRIGGER EXT TRIG input.	213. Press the EXECUTE button.
	214. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.

DATE 18 JAN 68

SUBSYSTEM Computer	ASSY Block II C-Computer
215. Press Keys CL, 0101.	232. Press Keys CL, 0101.
216. Press the EXECUTE button.	233. Press the EXECUTE button.
217. Set the T12 COUNTER STOP switch to the OFF position.	234. Set the T12 COUNTER STOP switch to the OFF position.
218. Press the MONITOR indicator switch to the on (illuminated) position.	235. Press the MONITOR indicator switch to the on (illuminated) position.
219. Set the FREQ + PHASE switch to the OFF position.	236. Set the FREQ + PHASE switch to the OFF position.
220. Set the SCOPE switch to position DIFF T and SCOPE MODE CONTROL to the A + B position. Set CHANNEL B to INVERT DC position.	237. Set the CHANNEL T switches for position 217.
221. Set the CHANNEL T switches for position 216.	238. Press the PROCEED button.
222. Press the PROCEED button.	239. Measure and record the pulse characteristics specified in Figure 1.
223. Measure and record the pulse characteristics specified in Figure 1.	240. Set the CHANNEL S switches for position 314.
224. Set the CHANNEL S switches for position 113.	241. Set the SCOPE switch to the DIFF S position.
225. Set the FREQ + PHASE switch to position FRT T - S.	242. Measure and record the pulse characteristics specified in Figure 1.
226. Measure and record the time delay from the falling edge of CNTR-A signal to the rising edge of the CNTR-B signal.	243. Set the SCOPE switch to position ALTERNATE S - T.
PULSE CHARACTERISTICS OF SIGNALS XA043 AND XA051.	244. Adjust the Oscilloscope as follows:
227. Set the T12 COUNTER STOP switch to the ON position.	a. Provide an external sync from channel A to the NORMAL AND DELAYING TRIGGER EXT TRIG input.
228. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	b. Set TIME/CM to 10 msec.
229. Press Keys CL, 00100, 00014.	c. Display Logic to NORM.
230. Press the EXECUTE button.	d. Mode switch to ALT.
231. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	245. Use the X5 and X10 Magnifier to measure and record the time delay from the last pulse on CHANNEL T to the first pulse on CHANNEL S.

DATE 18 JAN 68

JOB RADAR SIGNAL MEASUREMENTS TEST		JDC 05786 REV D PAGE 9 OF 13
SUBSYSTEM Computer	ASSY Block II C-Computer	
246. Set the CHANNEL S switches to position 113.	262. Set the SCOPE switch to position DIFF T.	
247. Set the FREQ + PHASE switch to position FRT T → S.	263. Set the CHANNEL T switches for position 218.	
248. Measure and record the time delay from the falling edge of CNTR-A signal and the rising edge of the CNTR-B signal.	264. Press the PROCEED button.	
249. Set the CHANNEL T switches for position 314.	265. Measure and record the pulse characteristics specified in Figure 1. Assume that SCOPE MODE control is set to the A + B position.	
250. Set the CHANNEL S switches for position 112.	266. Set the CHANNEL S switches for position 112.	
251. Measure and record the time delay from the falling edge of CNTR-A signal, and the rising edge of the CNTR-B signal.	267. Set the FREQ + PHASE switch to the FRT T → S position.	
PULSE CHARACTERISTICS OF SIGNAL XA044	268. Measure and record the time delay from the falling edge of CNTR-A signal and the rising edge of the CNTR-B signal.	
252. Set the T12 COUNTER STOP switch to the ON position.	PULSE CHARACTERISTICS OF SIGNAL XA045	
253. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	269. Set the T12 COUNTER STOP switch to the ON position.	
254. Press Keys CL, 00100, 00015.	270. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	
255. Press the EXECUTE button.	271. Press Keys CL, 00100, 00016.	
256. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	272. Press the EXECUTE button.	
257. Press Keys CL, 0101.	273. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	
258. Press the EXECUTE button.	274. Press Keys CL, 0101.	
259. Set the T12 COUNTER STOP switch to the OFF position.	275. Press the EXECUTE button.	
260. Press the MONITOR indicator switch to the on (illuminated) position.	276. Set the T12 COUNTER STOP switch to the OFF position.	
261. Set the FREQ + PHASE switch to the OFF position.	277. Press the MONITOR indicator switch to the on (illuminated) position.	

DATE 18 JAN 68

JOB RADAR SIGNAL MEASUREMENTS TEST		JDC 05786 REV C PAGE 10 OF 13
SUBSYSTEM Computer	ASSY Block II C-Computer	
278. Set the FREQ + PHASE switch to the OFF position. Assume that the SCOPE MODE control is set to the A + B position.	295. Set the SCOPE switch to the DIFF T position. Assume that the SCOPE MODE control is set to the A + B position.	
279. Set the SCOPE switch to the DIFF T position.	296. Set the CHANNEL T switches for position 220.	
280. Set the CHANNEL T switches to position 219.	297. Press the PROCEED button.	
281. Press the PROCEED button.	298. Measure and record the pulse characteristics specified in Figure 1.	
282. Measure and record the pulse characteristics specified in Figure 1.	299. Set the FREQ + PHASE switch to the FRT T → S position.	
283. Set the FREQ + PHASE switch to position FRT T → S.	300. Measure and record the time delay from the falling edge of CNTR-A signal and the rising edge of the CNTR-B signal.	
284. Measure and record the time delay from the falling edge of CNTR-A signal and the rising edge of the CNTR-B signal.	RADAR COUNTER MARGINAL CHECK	
PULSE CHARACTERISTICS FOR SIGNAL XA046	300A. Set T12 COUNTER STOP switch to ON. Depress FRESH START and ALARM RESET pushbuttons. Depress the DSKY RESET pushbutton.	
285. Set the T12 COUNTER STOP switch to the ON position.	301. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	
286. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	302. Press Keys CL, 00100, 00011.	
287. Press Keys CL, 00100, 00017.	303. Verify that the RZ display is 0000 000 001 000 000.	
288. Press the EXECUTE button.	304. Verify that the REG SEL display is 0000 000 000 001 001.	
289. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	305. Deleted.	
290. Press Keys CL, 0101.	306. Press the EXECUTE button.	
291. Press the EXECUTE button.	307. Verify that the LINC indicator is on.	
292. Set the T12 COUNTER STOP switch to the OFF position.	308. Press Keys CL, 00046, 00000.	
293. Press the MONITOR indicator switch to the on (illuminated) position.		
294. Set the FREQ + PHASE switch to the OFF position.		

DATE 18 JAN 68

JOB RADAR SIGNAL MEASUREMENTS TEST		JDC 05786 REV D PAGE 11 OF 13
SUBSYSTEM Computer	ASSY Block II C-Computer	
309. Verify that the RZ display is 0000 000 000 100 110.	328. Press the MONITOR indicator switch to the on (illuminated) position.	
310. Verify that the REG SEL display is 0000 000 000 000 000.	329. Set the INCREMENTS INHIBIT switch to the OFF position.	
311. Press the EXECUTE button.	330. Set the T12 COUNTER STOP switch to the OFF position.	
312. Press the READ AGC indicator switch to the on (illuminated) position.	331. Sequentially depress Proceed & Alarm Reset. Verify CTS Alarm 1 & 6 are on (number 9 remains on, then goes off).	
313. Press Keys CL, 0046.	332. Press the SINGLE PULSE button three times.	
314. Verify that the RZ display is 0000 000 000 100 110.	333. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.	
315. Press the EXECUTE button.	334. Set the Y MARGINS switch to the V2 (High Zero) position.	
316. Verify that the OINC indicator is on.	335. Press the SINGLE PULSE button three times.	
317. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.	336. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.	
318. Set the AGREEMENT A switches for XXXX 0046.	337. Press the POSITIVE indicator switch to the off (extinguished) position.	
319. Set the Agreement A function switch to the SAMPLE position.	338. Press the NEGATIVE indicator switch to the on (illuminated) position.	
320. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	339. Press the SINGLE PULSE button three times.	
321. Press Keys CL, 0101.	340. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.	
322. Verify that the RZ display is 0000 000 001 000 001.	341. Set the Y MARGINS switch to the V3 position.	
323. Press the EXECUTE button.	342. Press the SINGLE PULSE button three times.	
324. Set the AGC INPUT COUNTERS switch to position 11.	343. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.	
325. Set the Y MARGINS switch to the V3 (Low One) position.	344. Set the T12 COUNTER STOP switch to the ON position.	
326. Press the POSITIVE indicator switch to the on (illuminated) position.		
327. Press the SINGLE PULSE indicator switch to the on (illuminated) position.		

DATE 18 JAN 68

JOB RADAR SIGNAL MEASUREMENTS TEST		JDC 05786 REV D PAGE 12 OF 13
SUBSYSTEM Computer	ASSY Block II C-Computer	
345. Set the INCREMENTS INHIBIT switch to the ON position.	364. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.	
346. Set the Agreement A function switch to the OFF position.	365. Set the Agreement A function switch to the SAMPLE position.	
347. Press the NEGATIVE indicator switch to the off (extinguished) position.	366. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.	
348. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	367. Press Keys CL, 0101.	
349. Press Keys CL, 00100, 00017.	368. Verify that the RZ display is 0000 000 001 000 001.	
350. Verify that the RZ display is 0000 000 001 000 000.	369. Press the EXECUTE button.	
351. Verify that the REG SEL display is 0000 000 000 001 111.	370. Set the AGC INPUT COUNTERS switch to position 12.	
352. Deleted.	371. Press the POSITIVE indicator switch to the on (illuminated) position.	
353. Press the EXECUTE button.	372. Press the MONITOR indicator switch to the on (illuminated) position.	
354. Verify that the LINC indicator is on.	373. Set the INCREMENTS INHIBIT switch to the OFF position.	
355. Press Keys CL, 00046, 00000.	374. Set the T12 COUNTER STOP switch to the OFF position.	
356. Verify that the RZ display is 0000 000 000 100 110.	375. Press the PROCEED button.	
357. Verify that the REG SEL display is 0000 000 000 000 000.	376. Press the SINGLE PULSE button three times.	
358. Press the EXECUTE button.	377. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.	
359. Press the READ AGC indicator switch to the on (illuminated) position.	378. Set the Y MARGINS switch to the V2 (High Zero) position.	
360. Press Keys CL, 0046.	379. Press the SINGLE PULSE button three times.	
361. Verify that the RZ display is 0000 000 000 100 110.	380. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.	
362. Press the EXECUTE button.		
363. Verify that the OINC indicator is on.		

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY Block II C-Computer

381. Press the POSITIVE indicator switch to the off (extinguished) position.

382. Press the NEGATIVE indicator switch to the on (illuminated) position.

383. Press the SINGLE PULSE button three times.

384. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.

385. Set the Y MARGINS switch to the V3 position.

386. Press the SINGLE PULSE button three times.

387. Verify that the RG display is 0050 000 000 111 000. Stamp data sheet.

388. Set the T12 COUNTER STOP switch to the ON position.

389. Set the INCREMENTS INHIBIT switch to the ON position.

390. Set the Agreement A function switch to the OFF position.

391. Set the Y MARGINS switch to the NORM position.

392. Press the NEGATIVE indicator switch to the off (extinguished) position.

393. Press the SINGLE PULSE indicator switch to the off (extinguished) position.

394. Set the AGC INPUT COUNTERS switch to position 1.

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 1 OF 5

JDC
NO. 05786
REV. D
INITIAL TDRR 35464

JOB RADAR SIGNAL MEASUREMENTS TEST

ASSEMBLY UNDER TEST			TEST HISTORY		
TITLE			DATE	START	END
SER. NO.	DWG	REV.	TIME	START	END
			TOTAL ELAPSED		
MAJOR GROUND SUPPORT EQUIPMENT					
NAME			SER. NO.		
NAME			SER. NO.		
CONDUCTED BY			APPROVED BY		
NAME/AFFILIATION			NAME/AFFILIATION		

Step	Parameter	Specification	Results
16	REG SEL Indication	1100 010 001 010 101	
30	REG SEL Indication	0000 001 010 101 010	
14	REG SEL Indication	0000 000 000 000 000	
58	REG SEL Indication	1100 011 011 111 111	
66	REG SEL Indication	0000 000 000 000 000	
93	Frequency Counter Display	15	
104	Frequency Counter Display	256	
117	Frequency Counter Display	256	
132	Frequency Counter Display	15	
142	Frequency Counter Display	256	
155	Frequency Counter Display	256	
168	Frequency Counter Display	256	
181	Frequency Counter Display	256	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 2 OF 5

JDC
NO. 05786
REV. D

JOB RADAR SIGNAL MEASUREMENTS TEST

Step	Parameter	Specification	Results
197	Pulse Characteristics (XA041)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	
200	Pulse Characteristics (XA047)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	
203	Time Delay	5.0 ± 0.5 msec (X10 Magnifier) or 5.0 ± 1.0 μsec (X5 Magnifier)	
207	Time Delay (XA041 FREQ) F05BSB2 & F05BSB0	304 ± 2 μsec	
209	Time Delay (XA047 FREQ) F05ASB2 & F05ASB0	304 ± 2 μsec	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 3 OF 5

JDC
NO. 05786
REV. D

JOB RADAR SIGNAL MEASUREMENTS TEST

Step	Parameter	Specification	Results
223	Pulse Characteristics (XA042)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	
226	Time Delay (XA042) F05BSB2 & F05BSB0	304 ± 2 μsec	
239	Pulse Characteristics (XA043)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	
242	Pulse Characteristics (XA051)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 4 OF 5

JDC
NO. 05786
REV. D

JOB RADAR SIGNAL MEASUREMENTS TEST

Step	Parameter	Specification	Results
	f. Noise (F)	NMT 0.4 volt p-p	
245	Time Delay	5.0 ± 0.5 msec (X10 Magnifier) or 5.0 ± 1.0 msec (X5 Magnifier)	
248	Time Delay (XA043 FREQ) F05BSB2 & F05BSB0	304 ± 2 μsec	
251	Time Delay (XA051 FREQ) F05ASB2 & F05ASB0	304 ± 2 μsec	
265	Pulse Characteristics (XA044)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	
268	Time Delay (XA044 FREQ) F05BSB2 & F05BSB0	304 ± 2 μsec	
282	Pulse Characteristics (XA045)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 5 OF 5

JDC
NO. 05786
REV. D

JOB RADAR SIGNAL MEASUREMENTS TEST

Step	Parameter	Specification	Results
284	Time Delay (XA045 FREQ) F05BSB2 & F05BSB0	304 ± 2 μsec	
298	Pulse Characteristics (XA046)		
	a. Amplitude (A)	6.0 ± 1.0 Volts	
	b. Pulse Width (B)	3.00 ± 0.25 μsec	
	c. Backswing (D)	NMT 40% of A	
	d. Droop (E)	NMT 15% of A	
	e. Rise Time (C)	NMT 0.2 μsec	
	f. Noise (F)	NMT 0.4 volt p-p	
300	Time Delay (XA046 FREQ) F05BSB2 & F05BSB0	304 ± 2 μsec	
317	REG SEL Indication	0000 000 000 000 000	
333	RG Indication	0000 000 000 000 111	
336	RG Indication	0000 000 000 000 111	
340	RG Indication	0000 000 000 000 111	
343	RG Indication	0000 000 000 111 000	
364	REG SEL Indication	0000 000 000 000 000	
377	RG Indication	0000 000 000 000 111	
380	RG Indication	0000 000 000 000 111	
384	RG Indication	0000 000 000 000 111	
387	RG Indication	0000 000 000 111 000	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 9 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
566.	Frequency (XC 140)	3200.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____
567.	Frequency (XC 197)	3200.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____
568.	Frequency (XC 149)	800.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 10 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
569.	Frequency (XC 150)	800.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____
570.	Frequency (XC 151)	3200.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____
571.	Frequency (XC 152)	3200.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 11 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
572.	Frequency (XC 155)	12,800.00 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____
573.	Frequency (XC 901)	25,600.00 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____
574.	Frequency (XC 052)	3200.0 \pm 0.2 cps	_____
	Amplitude (A)	7 \pm 2 volts	_____
	Pulse Width (B)	3.0 \pm 0.5 μ sec	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 12 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
	Rise Time (C)	NMT 0.2 μ sec	_____
	Back Swing (D)	NMT 0.4 A	_____
	Droop (E)	NMT 0.2 A	_____
	Noise (F)	NMT 0.4 volt p-p	_____

DATE 18 JAN 68

SUBSYSTEM Computer ASSY. Block II C-Computer

Tests the operation of the computer input-output channels 5, 6, 12, 30, 31, 32, and 33. Procedures for checking input-output and continuous interface signals are also provided.

Rev. Ref.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
A	3-22-68	35897	20, 26	7	EA/72	-	05413, 05414, ND-1021042, ND-1021043
B	8-6-68	36665	15	-	EA/72	-	
C	2-24-68	37377	23	-	EA/72	-	IMPORTANT

PREPARATION

1. Verify that the Programmer and Monitor and Logic Drawer No. 2 panels are set-up as specified in JDC 05413.

2. Verify that the XY and RDC Interface panels are set-up as specified in JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel and the XY and RDC Interface panels of the CTS.

3. On the Power Control panel:

- Set the RANGE SELECT switch to the 40V position.
- Set the VOLTAGE SELECT switch to the RDC position.

4. On the RDC Interface panel, set the CHV METERS switch to the DCVM position.

OPERATION

5. Press the LOAD CHAN V 2K OHMS and LOAD CHAN V 1K OHMS annunciators on the RDC Interface panel to energize.

6. Test signals RD086 and RD087 as follows:

- Set the CHANNEL V switches on the RDC Interface panel to position 301.
- Observe the digital voltmeter indication on the Power Control panel. Record on data sheet.
- Press the LOAD CHAN V 2K OHMS annunciator to the off position.

7. Test signals RD166 and RD861 as follows:

VERIFICATION WITH SIOL REQUIRED BEFORE USE

DATE 18 JAN 68

- Set the CHANNEL V switches to position 305.
 - Observe the digital voltmeter indication. Record on data sheet.
8. Test signals RD863 and RD869 as follows:
- Set the CHANNEL V switches to position 305.
 - Observe the digital voltmeter indication. Record on data sheet.
9. Test signals RD865 and RD904 as follows:
- Set the CHANNEL V switches to position 307.
 - Observe the digital voltmeter indication. Record on data sheet.
10. Test signals RD866 and RD867 as follows:
- Set the CHANNEL V switches to 308.
 - Observe the digital voltmeter indication. Record on data sheet.
11. Test signals RD868 and RD870 as follows:
- Press the LOAD CHAN V 1K OHMS annunciator to the off position, and press the LOAD CHAN V 2K OHMS annunciator to the on position.
 - Set the CHANNEL V switches to position 309.
 - Observe the digital voltmeter indication. Record on data sheet.
12. Test signals RD877 and RD878 as follows:
- Press the LOAD CHAN V 2K OHMS annunciator to the off position, and press the LOAD CHAN V 1K OHMS annunciator to the on position.
- Test signal RD091 as follows:
 - Press the LOAD CHAN V 1K OHMS annunciator to the off position, and press the LOAD CHAN V 2K OHMS annunciator to the on position.
 - Set the CHANNEL V switches to position 302.
 - Observe the digital voltmeter indication. Record on data sheet.
 - Test signal RD101 as follows:
 - Set the CHANNEL V switches to position 303.
 - Observe the digital voltmeter indication. Record on data sheet.
 - Test signal RD907 as follows:
 - Press the LOAD CHAN V 2K OHMS annunciator to the off position, and press the LOAD CHAN V 1K OHMS annunciator to the on position.
 - Set the CHANNEL V switches to position 310.
 - Observe the digital voltmeter indication. Record on data sheet.
 - Test signal RD874 as follows:
 - Set the CHANNEL V switches to position 311.

DATE 18 JAN 68

- Observe the digital voltmeter indication. Record on data sheet.
- Test signal RD876 as follows:
 - Press the LOAD CHAN V 1K OHMS annunciator to the off position, and press the LOAD CHAN V 2K OHMS annunciator to the on position.
 - Set the CHANNEL V switches to position 312.
 - Observe the digital voltmeter indication. Record on data sheet.
- Test signal RD879 as follows:
 - Set the CHANNEL V switches to position 314.
 - Observe the digital voltmeter indication. Record on data sheet.
- Test signal RD251 as follows:
 - Set the CHANNEL V switches to position 319.
 - Observe the digital voltmeter indication (0 vdc). Record on data sheet.
- Test signal RD903 as follows:
 - Set the CHANNEL V switches to position 401.
 - Observe the digital voltmeter indication. Record on data sheet.
- Test signal RD175 as follows:
 - Set the CHANNEL V switches to position 402.
- Observe the digital voltmeter indication (2 vdc). Record on data sheet.
- Test signal RD176 as follows:
 - Set the CHANNEL V switches to position 403.
 - Observe the digital voltmeter indication (7.0 vdc). Record on data sheet.
- Test signal RD177 as follows:
 - Press the LOAD CHAN V 2K OHMS annunciator to the off position, and press the LOAD CHAN V 1K OHMS annunciator to the on position.
 - Set the CHANNEL V switches to position 411.
 - Observe the digital voltmeter indication (2 vdc.) Record on data sheet.
- Press LOAD CHAN V 1K OHMS to de-energize.
- Set the CHANNEL V switches to position 101.
- CHANNEL 5 CHECK
- Press the KEYBOARD LOAD pushbutton indicator.
 - Press the CL Key.
 - Press Keys 00005.
 - Press Keys 00125.
- Verify that the RZ display is 0000 000 000 000 101.

DATE 18 JAN 68

- Verify that the REG SEL display is 0000 000 001 010 101.
- Press the CHANNEL button.
- Press the EXECUTE button.
- Verify that the LINC indicator is on.
- Press the READ-AGC pushbutton indicator.
 - Press the CL Key.
 - Press Keys 0005.
- Verify that the RZ display is 0000 000 000 000 101.
- Press the CHANNEL button.
- Press the EXECUTE button.
- Verify that the GINC indicator is on.
- Verify that the REG SEL display is 0000 000 001 010 101. Stamp data sheet.
- Press the KEYBOARD LOAD pushbutton indicator.
 - Press the CL Key.
 - Press Keys 00005.
 - Press Keys 00252.
- Verify that the RZ display is 0000 000 000 000 101.
- Verify that the REG SEL display is 0000 000 010 101 010.
- Press the CHANNEL button.
- Press the EXECUTE button.
- Verify that the LINC indicator is on.
- Press the READ-AGC pushbutton indicator.
 - Press the CL Key.

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
b. Press Keys 0005.		70.	Press the CHANNEL button.
57. Verify that the RZ display is 0000 000 000 000 101.		71.	Press the EXECUTE button.
58. Press the CHANNEL button.		72.	Verify that the OINC indicator is on.
59. Press the EXECUTE button.		73.	Verify that the REG SEL display is 0000 000 011 111 111. Stamp data sheet.
60. Verify that the OINC indicator is on.		74.	Press FRESH START.
61. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.		75.	Press the READ-AGC pushbutton.
62. Press the KEYBOARD LOAD pushbutton indicator.		a. Press the CL Key.	
a. Press the CL Key.		b. Press Keys 0005.	
b. Press Keys 00005.		76.	Verify that the RZ display is 0000 000 000 000 101.
c. Press Keys 00377.		77.	Press the CHANNEL button.
63. Verify that the RZ display is 0000 000 000 000 101.		78.	Press the EXECUTE button.
64. Verify that the REG SEL display is 0000 000 011 111 111.		79.	Verify that the OINC indicator is on.
65. Press the CHANNEL button.		80.	Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.
66. Press the EXECUTE button.		DC OUTPUT TEST	
67. Verify that the LINC indicator is on.		81.	Press the KEYBOARD LOAD pushbutton indicator.
68. Press the READ-AGC pushbutton indicator.		a. Press the CL Key.	
a. Press the CL Key.		b. Press Keys 00005.	
b. Press Keys 0005.		c. Press Keys 00377.	
69. Verify that the RZ display is 0000 000 000 000 101.		32.	Verify that the RZ display is 0000 000 000 000 101.
		83.	Verify that the REG SEL display is 0000 000 011 111 111.

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
84. Press the CHANNEL button.		b.	Observe the digital voltmeter indication (2.5 vdc) on the Power Control panel. Record on data sheet.
85. Press the EXECUTE button.		97.	Test signal CB806 as follows:
86. Verify that the LINC indicator is on.		a.	Set the CHANNEL V switches on the RDC Interface panel to position 602.
87. Press the READ-AGC pushbutton indicator.		b.	Observe the digital voltmeter indication (2.5 vdc) on the Power Control panel. Record on data sheet.
a. Press the CL Key.		98.	Test signal CB805 as follows:
b. Press Keys 0005.		a.	Set the CHANNEL V switches to position 603.
88. Verify that the RZ display is 0000 000 000 000 101.		b.	Observe the digital voltmeter indication (2.5 vdc) on the Power Control panel. Record on data sheet.
89. Press the CHANNEL button.		99.	Test signal CB802 as follows:
90. Press the EXECUTE button.		a.	Set the CHANNEL V switches to position 604.
91. Verify that the OINC indicator is on.		b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
92. Verify that the REG SEL display is 0000 000 011 111 111. Stamp data sheet.		100.	Test signal CB803 as follows:
93. On the Power Control panel:		a.	Set the CHANNEL V switches to position 605.
a. Set the RANGE SELECT switch to the 40V position.		b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
b. Set the VOLTAGE SELECT switch to the RDC position.		101.	Test signal CB808 as follows:
94. Set the CHV METERS switch on the RDC interface panel to the DCVM position.		a.	Set the CHANNEL V switches to position 606.
95. Depress the LOAD CHAN V 1K OHMS annunciator on the RDC Interface panel to energize.		b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
96. Test signal CB801 as follows:			
a. Set the CHANNEL V switch on the RDC interface panel to position 601.			

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
102. Test signal CB807 as follows:		112.	Verify that the LINC indicator is on.
a. Set the CHANNEL V switches to position 607.		113.	Press the READ-AGC pushbutton indicator.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		a. Press the CL Key.	
103. Test signal CB804 as follows:		b. Press Keys 0006.	
a. Set the CHANNEL V switches to position 608.		114.	Verify that the RZ display is 0000 000 000 000 110.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		115.	Press the CHANNEL button.
104. Set the CHV METERS switch to the OFF position.		116.	Press the EXECUTE button.
105. Press LOAD CHAN V 1K OHMS to de-energize.		117.	Verify that the OINC indicator is on.
106. Set the CHANNEL V switches to position 101.		118.	Verify that the REG SEL display is 0000 000 001 010 101. Stamp data sheet.
CHANNEL 6 CHECK		119.	Press the KEYBOARD LOAD pushbutton indicator.
107. Press the KEYBOARD LOAD pushbutton indicator.		a. Press the CL Key.	
a. Press the CL Key.		b. Press Keys 00006.	
b. Press Keys 00006.		c. Press Keys 00252.	
c. Press Keys 00125.		120.	Verify that the RZ display is 0000 000 000 000 110.
108. Verify that the RZ display is 0000 000 000 000 110.		121.	Verify that the REG SEL display is 0000 000 010 101 010.
109. Verify that the REG SEL display is 0000 000 001 010 101.		122.	Press the CHANNEL button.
110. Press the CHANNEL button.		123.	Press the EXECUTE button.
111. Press the EXECUTE button.		124.	Verify that the LINC indicator is on.
		125.	Press the READ-AGC pushbutton indicator.
		a. Press the CL Key.	

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
b. Press Keys 0006.		140.	Press the EXECUTE button.
126. Verify that the RZ display is 0000 000 000 000 110.		141.	Verify that the OINC indicator is on.
127. Press the CHANNEL button.		142.	Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.
128. Press the EXECUTE button.		143.	Press the KEYBOARD LOAD pushbutton indicator.
129. Verify that the OINC indicator is on.		a. Press the CL Key.	
130. Verify that the REG SEL display is 0000 000 010 101 010. Stamp data sheet.		b. Press Keys 00006.	
131. Press the KEYBOARD LOAD pushbutton indicator.		c. Press Keys 00377.	
a. Press the CL Key.		144.	Verify that the RZ display is 0000 000 000 000 110.
b. Press Keys 00006.		145.	Verify that the REG SEL display is 0000 000 011 111 111.
c. Press Keys 00000.		146.	Press the CHANNEL button.
132. Verify that the RZ display is 0000 000 000 000 110.		147.	Press the EXECUTE button.
133. Verify that the REG SEL display is 0000 000 000 000 000.		148.	Verify that the LINC indicator is on.
134. Press the CHANNEL button.		149.	Press the READ-AGC pushbutton indicator.
135. Press the EXECUTE button.		a. Press the CL Key.	
136. Verify that the LINC indicator is on.		b. Press Keys 0006.	
137. Press the READ-AGC pushbutton indicator.		150.	Verify that the RZ display is 0000 000 000 000 110.
a. Press the CL Key.		151.	Press the CHANNEL button.
b. Press Keys 0006.		152.	Press the EXECUTE button.
138. Verify that the RZ display is 0000 000 000 000 110.		153.	Verify that the OINC indicator is on.
139. Press the CHANNEL button.		154.	Verify that the REG SEL display is 0000 000 011 111 111. Stamp data sheet.

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 9 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
155. Press FRESH START.		168. Press the READ-AGC pushbutton indicator.
156. Press the READ-AGC pushbutton indicator.		a. Press the CL Key.
a. Press the CL Key.		b. Press Keys 0006.
b. Press Keys 0006.		169. Verify that the RZ display is 0000 000 000 000 110.
157. Verify that the RZ display is 0000 000 000 000 110.		170. Press the CHANNEL button.
158. Press the CHANNEL button.		171. Press the EXECUTE button.
159. Press the EXECUTE button.		172. Verify that the OINC indicator is on.
160. Verify that the OINC indicator is on.		173. Verify that the REG SEL display is 0000 000 011 111 111. Stamp data sheet.
161. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.		174. On the Power Control panel:
DC OUTPUT TEST		a. Set the RANGE SELECT switch to the 40V position.
162. Press the KEYBOARD LOAD pushbutton indicator.		b. Set the VOLTAGE SELECT switch to the RDC position.
a. Press the CL Key.		175. Set the CHV METERS switch on the RDC Interface panel to the DCVM position.
b. Press Keys 0006.		176. Press the LOAD CHAN V IK OHMS annunciator on the RDC Interface panel to energize.
c. Press Keys 00377.		177. Test signal CB813 as follows:
163. Verify that the RZ display is 0000 000 000 000 110.		a. Set the CHANNEL V switches on the RDC Interface panel to position 609.
164. Verify that the REG SEL display is 0000 000 011 111 111.		b. Observe the digital voltmeter indication (2.5 vdc) on the Power Control panel. Record on data sheet.
165. Press the CHANNEL button.		
166. Press the EXECUTE button.		
167. Verify that the LINC indicator is on.		

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 10 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
178. Test signal CB816 as follows:		a. Set the CHANNEL V switches to position 610.
a. Set the CHANNEL V switches to position 610.		b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		184. Test signal CB810 as follows:
179. Test signal CB815 as follows:		a. Set the CHANNEL V switches to position 616.
a. Set the CHANNEL V switches to position 611.		b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		185. Set the CHV METERS switch to the OFF position.
180. Test signal CB814 as follows:		186. Press LOAD CHAN V IK OHMS to de-energize.
a. Set the CHANNEL V switches to position 612.		187. Set the CHANNEL V switches to position 101.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		188. Press the KEYBOARD LOAD pushbutton indicator.
181. Test signal CB809 as follows:		189. Press the CL Key.
a. Set the CHANNEL V switches to position 613.		190. Press Keys 00012.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		191. Press Keys 52525.
182. Test signal CB812 as follows:		192. Verify that the RZ display is 0000 000 000 001 010.
a. Set the CHANNEL V switches to position 614.		193. Verify that the REG SEL display is 0101 010 101 010 101.
b. Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.		194. Press the CHANNEL button.
183. Test signal CB811 as follows:		195. Press the EXECUTE button.
		196. Verify that the LINC indicator is on.

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 11 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
197. Press the READ-AGC pushbutton indicator.		217. Verify that the RZ display is 0000 000 300 001 010.
198. Press the CL Key.		218. Press the CHANNEL button.
199. Press Keys 0012.		219. Press the EXECUTE button.
200. Verify that the RZ display is 0000 000 000 001 010.		220. Verify that the OINC indicator is on.
201. Press the CHANNEL button.		221. Verify that the REG SEL display is 0010 101 010 101 010. Stamp data sheet.
202. Press the EXECUTE button.		222. Press the KEYBOARD LOAD pushbutton indicator.
203. Verify that the OINC indicator is on.		223. Press the CL Key.
204. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.		224. Press Keys 00012.
205. Press the KEYBOARD LOAD pushbutton indicator.		225. Press Keys 00000.
206. Press the CL Key.		226. Verify that the RZ display is 0000 000 000 001 010.
207. Press Keys 00012.		227. Verify that the REG SEL display is 0000 000 000 000 000.
208. Press Keys 25252.		228. Press the CHANNEL button.
209. Verify that the RZ display is 0000 000 000 001 010.		229. Press the EXECUTE button.
210. Verify that the REG SEL display is 0010 101 010 101 010.		230. Verify that the LINC indicator is on.
211. Press the CHANNEL button.		231. Press the READ-AGC pushbutton indicator.
212. Press the EXECUTE button.		232. Press the CL Key.
213. Verify that the LINC indicator is on.		233. Press Keys 0012.
214. Press the READ-AGC pushbutton indicator.		234. Verify that the RZ display is 0000 000 000 001 010.
215. Press the CL Key.		235. Press the CHANNEL button.
216. Press Keys 0012.		236. Press the EXECUTE button.

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 12 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
237. Verify that the OINC indicator is on.		257. Press the CL Key.
238. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.		258. Press Keys 0012.
239. Press the KEYBOARD LOAD pushbutton indicator.		259. Verify that the RZ display is 0000 000 000 001 010.
240. Press the CL Key.		260. Press the CHANNEL button.
241. Press Keys 00012.		261. Press the EXECUTE button.
242. Press Keys 77777.		262. Verify that the OINC indicator is on.
243. Verify that the RZ display is 0000 000 000 001 010.		263. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.
244. Verify that the REG SEL display is 0111 111 111 111 111.		264. On the Power Control panel:
245. Press the CHANNEL button.		a. Set the RANGE SELECT switch to the 40V position.
246. Press the EXECUTE button.		b. Set the VOLTAGE SELECT switch to the RDC position.
247. Verify that the LINC indicator is on.		265. On the RDC Interface panel:
248. Press the READ-AGC pushbutton indicator.		a. Set the CHV METERS switch to the DCVM position.
249. Press the CL Key.		b. Depress the LOAD CHAN V IK OHMS annunciator to energize.
250. Press Keys 0012.		266. Depress the LOAD CHAN V 2K OHMS annunciator to energize.
251. Verify that the RZ display is 0000 000 000 001 010.		267. Test signal CB013 as follows:
252. Press the CHANNEL button.		a. Set the CHANNEL V switches on the RDC Interface panel to position 520.
253. Press the EXECUTE button.		b. Observe the digital voltmeter indication (2.5 vdc) on the Power Control panel. Record on data sheet.
254. Verify that the OINC indicator is on.		268. Press the KEYBOARD LOAD pushbutton indicator.
255. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.		
256. Press FRESH START.		

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
269.	Press the CL Key.	281.	Test signal CB906 as follows:
270.	Press Keys 00012.	a.	Set the CHANNEL V switch to position 501.
271.	Press Keys 77777.	b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
272.	Verify that the RZ display is 0000 000 000 001 010.	282.	Test signal CB185 as follows:
273.	Verify that the REG SEL display is 0111 111 111 111 111.	a.	Set the CHANNEL V switches to position 502.
274.	Press the CHANNEL button.	b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
275.	Press the EXECUTE button.	283.	Test signal CB186 as follows:
276.	Verify that the LINC indicator is on.	a.	Set the CHANNEL V switches to position 503.
277.	Verify that the M34 indicator (CB233) on the XY Interface panel is on. Stamp data sheet.	b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
278.	Verify that the M36 indicator (CB234) on the XY Interface panel is on. Stamp data sheet.	284.	Test signal CB902 as follows:
279.	Test signal CB909 as follows:	a.	Set the CHANNEL V switches to position 504.
a.	Press the LOAD CHAN V 2K OHMS annunciator to the off position.	b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
b.	Set the CHANNEL V switches to position 405.	285.	Test signal CB162 as follows:
c.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	a.	Set the CHANNEL V switches to position 505.
280.	Test signal CB160 as follows:	b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
a.	Set the CHANNEL V switches to position 406.	286.	Test signal CB011 as follows:
b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	a.	Press the LOAD CHAN V 2K OHMS annunciator to the on position.

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
b.	Set the CHANNEL V switches to position 506.	b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.
c.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	292.	Set the CHV METERS switch to the OFF position.
287.	Test signal CB161 as follows:	293.	Press LOAD CHAN V 1K OHMS to de-energize.
a.	Press the LOAD CHAN V 2K OHMS annunciator to the off position.	CHANNEL 30 CHECK	
b.	Set the CHANNEL V switches to position 507.	294.	Press the READ-AGC indicator switch to the on (illuminated) position.
c.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	285.	Press Keys CL, 0030.
288.	Test signal CB194 as follows:	296.	Verify that the RZ display is 0000 000 000 011 000.
a.	Set the CHANNEL V switches to position 508.	297.	Press the CHANNEL button.
b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	298.	Press the EXECUTE button.
289.	Test signal CB195 as follows:	299.	Verify that the OINC indicator is on.
a.	Set the CHANNEL V switches to position 509.	300.	Press the FORCED READ indicator switch to the on (illuminated) position.
b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	301.	Set the T12 COUNTER STOP switch to the OFF position.
290.	Test signal CB196 as follows:	302.	Press the PROCEED button.
a.	Set the CHANNEL V switches to position 510.	303.	Verify that the OINC indicator is on.
b.	Observe the digital voltmeter indication (2.5 vdc). Record on data sheet.	304.	Verify that the STPIT indicator is off.
291.	Test signal CB841 as follows:	NOTE: The annunciators listed in this procedure are indicator switches, which are alternately depressed to energize (illuminated) and alternately depressed to de-energize (extinguished).	
a.	Set the CHANNEL V switches to position 617.		

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
305.	Energize the following annunciators:	c.	CH30-10/IN0-10
a.	CH30-14/IN0-14	d.	CH30-8/IN0-8
b.	CH30-12/IN0-12	e.	CH30-6/IN0-6
c.	CH30-10/IN0-10	f.	CH30-4/IN0-4
d.	CH30-8/IN0-8	g.	CH30-2/IN0-2
e.	CH30-6/IN0-6	310.	Verify that the REG SEL display is 0010 101 010 101 010. Stamp data sheet.
f.	CH30-4/IN0-4	311.	De-energize the following annunciators:
g.	CH30-2/IN0-2	a.	CH30-15/IN0-15
306.	Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.	b.	CH30-13/IN0-13
307.	Energize the following annunciators:	c.	CH30-11/IN0-11
a.	CH30-15/IN0-15	d.	CH30-9/IN0-9
b.	CH30-13/IN0-13	e.	CH30-7/IN0-7
c.	CH30-11/IN0-11	f.	CH30-5/IN0-5
d.	CH30-9/IN0-9	g.	CH30-3/IN0-3
e.	CH30-7/IN0-7	h.	CH30-1/IN0-1
f.	CH30-5/IN0-5	312.	Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.
g.	CH30-3/IN0-3	High Zero Test	
h.	CH30-1/IN0-1	313.	Set the DE MARGINS switch to the V0 position.
308.	Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.	314.	Energize the CH30-15/IN0-15 through CH30-1/IN0-1 annunciators and verify that the REG SEL display remains 1111 111 111 111 111 with no intermittent changes as the annunciators are being energized. Stamp data sheet.
309.	De-energize the following annunciators:		
a.	CH30-14/IN0-14		
b.	CH30-12/IN0-12		

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
305.	De-energize the CH30-15/IN0-15 through CH30-1/IN0-1 annunciators and verify that the REG SEL display remains 1111 111 111 111 111 with no intermittent changes as the annunciators are being de-energized. Stamp data sheet.	329.	Energize the CH30-11/IN0-11 annunciator.
Low Ole Test		330.	Verify that the REG SEL display is 1111 101 111 111 111. Stamp data sheet.
316.	Set the DE MARGINS switch to the V1 position.	331.	De-energize the CH30-11/IN0-11 annunciator.
317.	Energize the CH30-15/IN0-15 annunciator.	332.	Energize the CH30-10/IN0-10 annunciator.
318.	Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.	333.	Verify that the REG SEL display is 1111 110 111 111 111. Stamp data sheet.
319.	De-energize the CH30-15/IN0-15 annunciator.	334.	De-energize the CH30-10/IN0-10 annunciator.
320.	Energize the CH30-14/IN0-14 annunciator.	335.	Energize the CH30-9/IN0-9 annunciator.
321.	Verify that the REG SEL display is 1101 111 111 111 111. Stamp data sheet.	336.	Verify that the REG SEL display is 1111 111 011 111 111. Stamp data sheet.
322.	De-energize the CH30-14/IN0-14 annunciator.	337.	De-energize the CH30-9/IN0-9 annunciator.
323.	Energize the CH30-13/IN0-13 annunciator.	338.	Energize the CH30-8/IN0-8 annunciator.
324.	Verify that the REG SEL display is 1110 111 111 111 111. Stamp data sheet.	339.	Verify that the REG SEL display is 1111 111 101 111 111. Stamp data sheet.
325.	De-energize the CH30-13/IN0-13 annunciator.	340.	De-energize the CH30-8/IN0-8 annunciator.
326.	Energize the CH30-12/IN0-12 annunciator.	341.	Energize the CH30-7/IN0-7 annunciator.
327.	Verify that the REG SEL display is 1111 011 111 111 111. Stamp data sheet.	342.	Verify that the REG SEL display is 1111 111 110 111 111. Stamp data sheet.
328.	De-energize the CH30-12/IN0-12 annunciator.	343.	De-energize the CH30-7/IN0-7 annunciator.
		344.	Energize the CH30-6/IN0-6 annunciator.

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
345. Verify that the REG SEL display is 1111 111 111 011 111. Stamp data sheet.		362. Set the DE MARGINS switch to the NORM position.	
346. De-energize the CH30-6/IN0-6 annunciator.		363. Set the T12 COUNTER STOP switch to the ON position.	
347. Energize the CH30-5/IN0-5 annunciator.		364. De-energize the FORCED READ annunciator.	
348. Verify that the REG SEL display is 1111 111 111 101 111. Stamp data sheet.		CHANNEL 31 CHECK	
349. De-energize the CH30-6/IN0-5 annunciator.		365. Press Keys CL, 0031.	
350. Energize the CH30-4/IN0-4 annunciator.		366. Verify that the RZ display is 0000 000 000 011 001.	
351. Verify that the REG SEL display is 1111 111 111 110 111. Stamp data sheet.		367. Press the CHANNEL button.	
352. De-energize the CH30-4/IN0-4 annunciator.		368. Press the EXECUTE button.	
353. Energize the CH30-3/IN0-3 annunciator.		369. Verify that the OINC Indicator is on.	
354. Verify that the REG SEL display is 1111 111 111 111 011. Stamp data sheet.		370. Press the FORCED READ Indicator switch to the on (illuminated) position.	
355. De-energize the CH30-3/IN0-3 annunciator.		371. Set the T12 COUNTER STOP switch to the OFF position.	
356. Energize the CH30-2/IN0-2 annunciator.		372. Press the PROCEED button.	
357. Verify that the REG SEL display is 1111 111 111 111 101. Stamp data sheet.		373. Verify that the OINC Indicator is on.	
358. De-energize the CH30-2/IN0-2 annunciator.		374. Verify that the STPIT indicator is off.	
359. Energize the CH30-1/IN0-1 annunciator.		375. Energize the following annunciators:	
360. Verify that the REG SEL display is 1111 111 111 111 110. Stamp data sheet.		a. CH31-14/IN2-14	
361. De-energize the CH30-1/IN0-1 annunciator.		b. CH31-12/IN2-12	
		c. CH31-10/IN2-10	
		d. CH31-8/IN2-8	
		e. CH31-6/IN2-6	
		f. CH31-4/IN2-4	

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
		g. CH31-2/IN2-2	
376. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.		a. CH31-15/IN2-15	
377. Energize the following annunciators:		b. CH31-13/IN2-13	
a. CH31-15/IN2-15		c. CH31-11/IN2-11	
b. CH31-13/IN2-13		d. CH31-9/IN2-9	
c. CH31-11/IN2-11		e. CH31-7/IN2-7	
d. CH31-9/IN2-9		f. CH31-5/IN2-5	
e. CH31-7/IN2-7		g. CH31-3/IN2-3	
f. CH31-5/IN2-5		h. CH31-1/IN2-1	
g. CH31-3/IN2-3			
h. CH31-1/IN2-1			
378. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.		382. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.	
379. De-energize the following annunciators:		<u>High Zero Test</u>	
a. CH31-14/IN2-14		383. Set the DE MARGINS switch to the V0 position.	
b. CH31-12/IN2-12		384. Energize the CH31-15/IN2-15 through CH31-1/IN2-1 annunciators and verify that the REG SEL display remains 1111 111 111 111 111 with no intermittent changes as the annunciators are being energized. Stamp data sheet.	
c. CH31-10/IN2-10		385. De-energize the CH31-15/IN2-15 through CH31-1/IN2-1 annunciators and verify that the REG SEL display remains 1111 111 111 111 111 with no intermittent changes as the annunciators are being de-energized. Stamp data sheet.	
d. CH31-8/IN2-8		<u>Low One Test</u>	
e. CH31-6/IN2-6		386. Set the DE MARGINS switch to the V1 position.	
f. CH31-4/IN2-4		387. Energize the CH31-15/IN2-15 annunciator.	
g. CH31-2/IN2-2			
380. Verify that the REG SEL display is 0010 101 010 101 010. Stamp data sheet.			
381. De-energize the following annunciators:			

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
388. Verify that the REG SEL display is 0011 111 111 111 111. Stamp data sheet.		404. De-energize the CH31-10/IN2-10 annunciator.	
389. De-energize the CH31-15/IN2-15 annunciator.		405. Energize the CH31-9/IN2-9 annunciator.	
390. Energize the CH31-14/IN2-14 annunciator.		406. Verify that the REG SEL display is 1111 111 011 111 111. Stamp data sheet.	
391. Verify that the REG SEL display is 1101 111 111 111 111. Stamp data sheet.		407. De-energize the CH31-9/IN2-9 annunciator.	
392. De-energize the CH31-14/IN2-14 annunciator.		408. Energize the CH31-8/IN2-8 annunciator.	
393. Energize the CH31-13/IN2-13 annunciator.		409. Verify that the REG SEL display is 1111 111 101 111 111. Stamp data sheet.	
394. Verify that the REG SEL display is 1110 111 111 111 111. Stamp data sheet.		410. De-energize the CH31-8/IN2-8 annunciator.	
395. De-energize the CH31-13/IN2-13 annunciator.		411. Energize the CH31-7/IN2-7 annunciator.	
396. Energize the CH31-12/IN2-12 annunciator.		412. Verify that the REG SEL display is 1111 111 110 111 111. Stamp data sheet.	
397. Verify that the REG SEL display is 1111 011 111 111 111. Stamp data sheet.		413. De-energize the CH31-7/IN2-7 annunciator.	
398. De-energize the CH31-12/IN2-12 annunciator.		414. Energize the CH31-6/IN2-6 annunciator.	
399. Energize the CH31-11/IN2-11 annunciator.		415. Verify that the REG SEL display is 1111 111 111 011 111. Stamp data sheet.	
400. Verify that the REG SEL display is 1111 101 111 111 111. Stamp data sheet.		416. De-energize the CH31-6/IN2-6 annunciator.	
401. De-energize the CH31-11/IN2-11 annunciator.		417. Energize the CH31-5/IN2-5 annunciator.	
402. Energize the CH31-10/IN2-10 annunciator.		418. Verify that the REG SEL display is 1111 111 111 101 111. Stamp data sheet.	
403. Verify that the REG SEL display is 1111 110 111 111 111. Stamp data sheet.		419. De-energize the CH31-5/IN2-5 annunciator.	

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
420. Energize the CH31-4/IN2-4 annunciator.		CHANNEL 32 CHECK	
421. Verify that the REG SEL display is 1111 111 111 110 111. Stamp data sheet.		NOTE: If ECP 518 has been incorporated, CH32-14/IN3-14 will be functional as detailed in the steps specifying the state of the REG SEL display.	
422. De-energize the CH31-4/IN2-4 annunciator.		435. Press Keys CL, 0032.	
423. Energize the CH31-3/IN2-3 annunciator.		436. Verify that the RZ display is 0000 000 000 011 010.	
424. Verify that the REG SEL display is 1111 111 111 111 011. Stamp data sheet.		437. Press the CHANNEL button.	
425. De-energize the CH31-3/IN2-3 annunciator.		438. Press the EXECUTE button.	
426. Energize the CH31-2/IN2-2 annunciator.		439. Verify that the OINC Indicator is on.	
427. Verify that the REG SEL display is 1111 111 111 111 101. Stamp data sheet.		440. Press the FORCED READ Indicator switch to the on (illuminated) position.	
428. De-energize the CH31-2/IN2-2 annunciator.		441. Set the T12 COUNTER STOP switch to the OFF position.	
429. Energize the CH31-1/IN2-1 annunciator.		442. Press the PROCEED button.	
430. Verify that the REG SEL display is 1111 111 111 111 110. Stamp data sheet.		443. Verify that the OINC Indicator is on.	
431. De-energize the CH31-1/IN2-1 annunciator.		444. Verify that the STPIT indicator is off.	
432. Set the DE MARGINS switch to the NORM position.		445. Energize the following annunciators:	
433. Set the T12 COUNTER STOP switch to the ON position.		a. CH32-14/IN3-14	
434. De-energize the FORCED READ annunciator.		b. CH32-12/IN3-12	
		c. CH32-10/IN3-10	
		d. CH32-8/IN3-8	
		e. CH32-6/IN3-6	
		f. CH32-4/IN3-4	

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 21 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
g. CH32-2/IN3-2		
446. Verify that the REG SEL display is 1101 110 101 010 101. (Without ECP 518, 1111 110 101 010 101). Stamp data sheet.		451. De-energize the following annunciators:
447. Energize the following annunciators:		a. CH32-15/IN3-15
a. CH32-15/IN3-15		b. CH32-13/IN3-13
b. CH32-13/IN3-13		c. CH32-11/IN3-11
c. CH32-11/IN3-11		d. CH32-9/IN3-9
d. CH32-9/IN3-9		e. CH32-7/IN3-7
e. CH32-7/IN3-7		f. CH32-5/IN3-5
f. CH32-5/IN3-5		g. CH32-3/IN3-3
g. CH32-3/IN3-3		h. CH32-1/IN3-1
h. CH32-1/IN3-1		
448. Verify that the REG SEL display is 1101 100 000 000 000. (Without ECP 518, 1111 100 000 000 000). Stamp data sheet.		452. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.
449. De-energize the following annunciators:		<u>High Zero Test</u>
a. CH32-14/IN3-14		453. Set the DE MARGINS switch to the V0 position.
b. CH32-12/IN3-12		
c. CH32-10/IN3-10		454. Energize the CH32-15/IN3-15 through CH32-1/IN3-1 annunciators and verify that the REG SEL display remains 1111 111 111 111 111 with no intermittent changes as the annunciators are being energized. Stamp data sheet.
d. CH32-8/IN3-8		455. De-energize the CH32-15/IN3-15 through CH32-1/IN3-1 annunciators and verify that the REG SEL display remains 1111 111 111 111 111 with no intermittent changes as the annunciators are being de-energized. Stamp data sheet.
e. CH32-6/IN3-6		<u>Low One Test</u>
f. CH32-4/IN3-4		456. Set the DE MARGINS switch to the V1 position.
g. CH32-2/IN3-2		
450. Verify that the REG SEL display is 1111 101 010 101 010. Stamp data sheet.		

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 22 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
457. Energize the CH32-15/IN3-15 annunciator.		472. Energize the CH32-10/IN3-10 annunciator.
458. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.		473. Verify that the REG SEL display is 1111 110 111 111 111. Stamp data sheet.
459. De-energize the CH32-15/IN3-15 annunciator.		474. De-energize the CH32-10/IN3-10 annunciator.
460. Energize the CH32-14/IN3-14 annunciator.		475. Energize the CH32-9/IN3-9 annunciator.
461. Verify that the REG SEL display is 1101 111 111 111 111. (Without ECP 518, 1111 111 111 111 111). Stamp data sheet.		476. Verify that the REG SEL display is 1111 111 011 111 111. Stamp data sheet.
462. De-energize the CH32-14/IN3-14 annunciator.		477. De-energize the CH32-9/IN3-9 annunciator.
463. Energize the CH32-13/IN3-13 annunciator.		478. Energize the CH32-8/IN3-8 annunciator.
464. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.		479. Verify that the REG SEL display is 1111 111 101 111 111. Stamp data sheet.
465. De-energize the CH32-13/IN3-13 annunciator.		480. De-energize the CH32-8/IN3-8 annunciator.
466. Energize the CH32-12/IN3-12 annunciator.		481. Energize the CH32-7/IN3-7 annunciator.
467. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.		482. Verify that the REG SEL display is 1111 111 110 111 111. Stamp data sheet.
468. De-energize the CH32-12/IN3-12 annunciator.		483. De-energize the CH32-7/IN3-7 annunciator.
469. Energize the CH32-11/IN3-11 annunciator.		484. Energize the CH32-6/IN3-6 annunciator.
470. Verify that the REG SEL display is 1111 101 111 111 111. Stamp data sheet.		485. Verify that the REG SEL display is 1111 111 111 011 111. Stamp data sheet.
471. De-energize the CH32-11/IN3-11 annunciator.		486. De-energize the CH32-6/IN3-6 annunciator.

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 23 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
487. Energize the CH32-5/IN3-5 annunciator.		to verify that bit 14 of the REG SEL display is a zero (1101 111 111 111 111). Stamp data sheet.
488. Verify that the REG SEL display is 1111 111 111 101 111. Stamp data sheet.		502. Verify that bit 14 of the REG SEL display switched back to a one (1111 111 111 111 111) when the DSKY PRO (STBY) pushbutton was released. Stamp data sheet.
489. De-energize the CH32-5/IN3-5 annunciator.		503. Set the T12 COUNTER STOP switch to the ON position.
490. Energize the CH32-4/IN3-4 annunciator.		504. De-energize the FORCED READ annunciator.
491. Verify that the REG SEL display is 1111 111 111 110 111. Stamp data sheet.		CHANNEL 33 CHECK
492. De-energize the CH32-4/IN3-4 annunciator.		504a. Press KYBD LOAD.
493. Energize the CH32-3/IN3-3 annunciator.		504b. Press Keys CL, 00033, 00000.
494. Verify that the REG SEL display is 1111 111 111 111 011. Stamp data sheet.		504c. Verify that RZ display is 0000 000 000 011 011
495. De-energize the CH32-3/IN3-3 annunciator.		504d. Verify that REG SEL display is 0000 000 000 000 000
496. Energize the CH32-2/IN3-2 annunciator.		504e. Press CHANNEL pushbutton.
497. Verify that the REG SEL display is 1111 111 111 111 101. Stamp data sheet.		504f. Press EXECUTE pushbutton.
498. De-energize the CH32-2/IN3-2 annunciator.		504g. Press READ AGC to ON.
499. Energize the CH32-1/IN3-1 annunciator.		505. Press Keys CL, 0033.
500. Verify that the REG SEL display is 1111 111 111 111 110. Stamp data sheet. De-energize the CH32-1/IN3-1 annunciator and set the DE MARGINS switch to the NORMAL position.		506. Verify that the RZ display is 0000 000 000 011 011.
		507. Press the CHANNEL button.
		508. Press the EXECUTE button.
		509. Verify that the OINC indicator is on.
		510. Press the FORCED READ indicator switch to the on (illuminated) position.
		511. Set the T12 COUNTER STOP switch to the OFF position.
		512. Press the PROCEED button.
NOTE: If ECP 518 has not been incorporated, do not perform steps 501 and 502.		
501. Depress the DSKY PRO (STBY) pushbutton, and hold depressed just long enough		

DATE 18 JAN 68

JOB INPUT/OUTPUT REGISTERS TEST		JDC 05787 REV C PAGE 24 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
513. Verify that the OINC indicator is on.		b. CH33-7
514. Verify that the STPIT indicator is off.		c. CH33-5
515. Energize the following annunciators:		d. CH33-3
a. CH33-10		e. CH33-1
b. CH33-8		
c. CH33-6		522. Verify that the REG SEL display is 1100 111 111 111 111. Stamp data sheet.
d. CH33-4		<u>High Zero Test</u>
e. CH33-2		523. Set the DE MARGINS switch to the V0 position.
516. Verify that the REG SEL display is 1100 110 101 010 101. Stamp data sheet.		524. Energize the CH33-10 through CH33-1 annunciators and verify that the REG SEL display remains 1100 111 111 111 111 with no intermittent changes as the annunciators are being energized. Stamp data sheet.
517. Energize the following annunciators:		525. De-energize the CH33-10 through CH33-1 annunciators and verify that the REG SEL display remains 1100 111 111 111 111 with no intermittent changes as the annunciators are being de-energized. Stamp data sheet.
a. CH33-9		<u>Low One Test</u>
b. CH33-7		526. Set the DE MARGINS switch to the V1 position.
c. CH33-5		527. Energize the CH33-10 annunciator.
d. CH33-3		528. Verify that the REG SEL display is 1100 110 111 111 111. Stamp data sheet.
e. CH33-1		529. De-energize the CH33-10 annunciator.
518. Verify that the REG SEL display is 1100 110 000 000 000. Stamp data sheet.		530. Energize the CH33-9 annunciator.
519. De-energize the following annunciators:		531. Verify that the REG SEL display is 1100 111 011 111 111. Stamp data sheet.
a. CH33-10		532. De-energize the CH33-9 annunciator.
b. CH33-8		533. Energize the CH33-8 annunciator.
c. CH33-6		
d. CH33-4		
e. CH33-2		
520. Verify that the REG SEL display is 1100 111 010 101 010. Stamp data sheet.		
521. De-energize the following annunciators:		
a. CH33-9		

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
534.	Verify that the REG SEL display is 1100 111 101 111 111. Stamp data sheet.	553.	De-energize the CH33-2 annunciator.
535.	De-energize the CH33-8 annunciator.	554.	Energize the CH33-1 annunciator.
536.	Energize the CH33-7 annunciator.	555.	Verify that the REG SEL display is 1100 111 111 111 110. Stamp data sheet.
537.	Verify that the REG SEL display is 1100 111 110 111 111. Stamp data sheet.	556.	De-energize the CH33-1 annunciator.
538.	De-energize the CH33-7 annunciator.	557.	Set the DE MARGINS switch to the NORM position.
539.	Energize the CH33-6 annunciator.	558.	Set the T12 COUNTER STOP switch to the ON position.
540.	Verify that the REG SEL display is 1100 111 111 011 111. Stamp data sheet.	559.	De-energize the FORCED READ annunciator.
541.	De-energize the CH33-6 annunciator.	CONTINUOUS SIGNALS CHECK	
542.	Energize the CH33-5 annunciator.	560.	Perform the preparation section of Frequency Measurement, JDC 05401.
543.	Verify that the REG SEL display is 1100 111 111 101 111. Stamp data sheet.	561.	Perform the preparation section of Pulse Measurement, JDC 05405.
544.	De-energize the CH33-5 annunciator.	562.	On the XY Interface panel:
545.	Energize the CH33-4 annunciator.	a.	Set the SCOPE switch to the DIFF S position.
546.	Verify that the REG SEL display is 1100 111 111 110 111. Stamp data sheet.	b.	Press LOAD CHAN S 510 OHMS to energize.
547.	De-energize the CH33-4 annunciator.	563.	Test signal XC 191 as follows:
548.	Energize the CH33-3 annunciator.	a.	Set the CHANNEL S switches to the 104 position.
549.	Verify that the REG SEL display is 1100 111 111 111 011. Stamp data sheet.	b.	Set the FREQ + PHASE switch to the FR S S → T position.
550.	De-energize the CH33-3 annunciator.		
551.	Energize the CH33-2 annunciator.		
552.	Verify that the REG SEL display is 1100 111 111 111 101. Stamp data sheet.		

DATE 15 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
		c.	Measure the frequency (51,200 cps) displayed on the Frequency Counter. Record on data sheet.
		d.	Set the FREQ + PHASE switch to the OFF position.
		e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.
564.	Test signal XC048 as follows:		
	a.	Set the CHANNEL S switches to the 105 position.	
	b.	Set the FREQ + PHASE switch to the FR S S → T position.	
	c.	Measure the Frequency (3200 cps) displayed on the Frequency Counter. Record on data sheet.	
	d.	Set the FREQ + PHASE switch to the OFF position.	
	e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.	
565.	Test signal XC139 as follows:		
	a.	Set the CHANNEL S switches to the 107 position.	

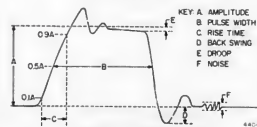


Figure 1

565. Test signal XC139 as follows:
- Set the CHANNEL S switches to the 107 position.

- Set the FREQ + PHASE switch to the FR S S → T position.
 - Measure the frequency (3200 cps) displayed on the Frequency Counter. Record on data sheet.
 - Set the FREQ + PHASE switch to the OFF position.
 - Measure the pulse characteristics shown on figure 1. Record on data sheet.
566. Test signal XC140 as follows:
- Set the CHANNEL S switches to the 108 position.
 - Set the FREQ + PHASE switch to the FR S S → T position.
 - Measure the frequency (3200 cps) displayed on the Frequency Counter. Record on data sheet.
 - Set the FREQ + PHASE switch to the OFF position.
 - Measure the pulse characteristics shown on figure 1. Record on data sheet.
567. Test signal XC197 as follows:
- Set the CHANNEL S switches to the 109 position.
 - Set the FREQ + PHASE switch to the FR S S → T position.
 - Measure the frequency (3200 cps) displayed on the Frequency Counter. Record on data sheet.
 - Set the FREQ + PHASE switch to the OFF position.

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
		e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.
568.	Test signal XC149 as follows:		
	a.	Set the CHANNEL S switches on the XY Interface panel to the 110 position.	
	b.	Set the FREQ + PHASE switch to the FR S S → T position.	
	c.	Measure the frequency (800 cps) displayed on Frequency Counter. Record on data sheet.	
	d.	Set the FREQ + PHASE switch to the OFF position.	
	e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.	
569.	Test signal XC150 as follows:		
	a.	Set the CHANNEL S switches to the 111 position.	
	b.	Set the FREQ + PHASE switch to the FR S S → T position.	
	c.	Measure the frequency (800 cps) displayed on the Frequency Counter. Record on data sheet.	
	d.	Set the FREQ + PHASE switch to the OFF position.	
	e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.	
570.	Test signal XC151 as follows:		
	a.	Set the CHANNEL S switches to the 112 position.	

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
		d.	Set the FREQ + PHASE switch to the OFF position.
		e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.
573.	Test signal XC901 as follows:		
	a.	Set the CHANNEL S switches to the 117 position.	
	b.	Set the FREQ + PHASE switch to the FR S S → T position.	
	c.	Measure the frequency (25.6 kpps) displayed on the Frequency Counter. Record on data sheet.	
	d.	Set the FREQ + PHASE switch to the OFF position.	
	e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.	
574.	Test signal XC052 as follows:		
	a.	Set the CHANNEL S switches to the 118 position.	
	b.	Set the FREQ + PHASE switch to the FR S S → T position.	
	c.	Measure the frequency (3200 cps) displayed on the Frequency Counter. Record on data sheet.	
	d.	Set the FREQ + PHASE switch to the OFF position.	
	e.	Measure the pulse characteristics shown on figure 1. Record on data sheet.	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 1 OF 12

JDC
NO. 05787
REV. C
INITIAL TDRR 35464

JOB INPUT/OUTPUT REGISTERS TEST

ASSEMBLY UNDER TEST		TEST HISTORY	
TITLE _____	DATE START _____ END _____ SITE / LOCATION _____		
SER. NO. _____ DWG. _____ REV. _____	TIME START _____ END _____ TOTAL ELAPSED _____		
MAJOR GROUND SUPPORT EQUIPMENT			
NAME _____	SER. NO. _____	CAL DATE _____	
NAME _____	SER. NO. _____	CAL DATE _____	
CONDUCTED BY _____ NAME/AFFILIATION _____		APPROVED BY _____ NAME/AFFILIATION _____	

Step	Parameter	Specification	Results
6.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
7.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
8.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
9.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
10.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
11.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
12.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
13.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
14.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
15.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
16.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
17.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
18.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____
19.	Digital Voltmeter Indication	0.0 (± 1.0) vdc	_____
20.	Digital Voltmeter Indication	13.5 (± 1.0) vdc	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 2 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
21.	Digital Voltmeter Indication	2.0 (± 0.6) vdc	_____
22.	Digital Voltmeter Indication	7.0 (± 0.25) vdc	_____
23.	Digital Voltmeter Indication	2.0 (± 0.6) vdc	_____
37.	REG SEL Indication	0000 000 001 010 101	_____
49.	REG SEL Indication	0000 000 010 101 010	_____
61.	REG SEL Indication	0000 000 000 000 000	_____
73.	REG SEL Indication	0000 000 011 111 111	_____
80.	REG SEL Indication	0000 000 000 000 000	_____
92.	REG SEL Indication	0000 000 011 111 111	_____
96.	Digital Voltmeter Indication	2.5 vdc	_____
97.	Digital Voltmeter Indication	2.5 vdc	_____
98.	Digital Voltmeter Indication	2.5 vdc	_____
99.	Digital Voltmeter Indication	2.5 vdc	_____
100.	Digital Voltmeter Indication	2.5 vdc	_____
101.	Digital Voltmeter Indication	2.5 vdc	_____
102.	Digital Voltmeter Indication	2.5 vdc	_____
103.	Digital Voltmeter Indication	2.5 vdc	_____
118.	REG SEL Indication	0000 000 001 010 101	_____
130.	REG SEL Indication	0000 000 010 101 010	_____
142.	REG SEL Indication	0000 000 000 000 000	_____
154.	REG SEL Indication	0000 000 011 111 111	_____
161.	REG SEL Indication	0000 000 000 000 000	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 3 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
173.	REG SEL Indication	0000 000 011 111 111	_____
177.	Digital Voltmeter Indication	2.5 vdc	_____
178.	Digital Voltmeter Indication	2.5 vdc	_____
179.	Digital Voltmeter Indication	2.5 vdc	_____
180.	Digital Voltmeter Indication	2.5 vdc	_____
181.	Digital Voltmeter Indication	2.5 vdc	_____
182.	Digital Voltmeter Indication	2.5 vdc	_____
183.	Digital Voltmeter Indication	2.5 vdc	_____
184.	Digital Voltmeter Indication	2.5 vdc	_____
204.	REG SEL Indication	1101 010 101 010 101	_____
221.	REG SEL Indication	0010 101 010 101 010	_____
238.	REG SEL Indication	0000 000 000 000 000	_____
255.	REG SEL Indication	1111 111 111 111 111	_____
263.	REG SEL Indication	0000 000 000 000 000	_____
267.	Digital Voltmeter Indication	2.5 vdc	_____
277.	Illuminated XY Indicator	M34	_____
278.	Illuminated XY Indicator	M36	_____
279c.	Digital Voltmeter Indication	2.5 vdc	_____
280b.	Digital Voltmeter Indication	2.5 vdc	_____
281b.	Digital Voltmeter Indication	2.5 vdc	_____
282b.	Digital Voltmeter Indication	2.5 vdc	_____
282b.	Digital Voltmeter Indication	2.5 vdc	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 4 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
284b.	Digital Voltmeter Indication	2.5 vdc	_____
285b.	Digital Voltmeter Indication	2.5 vdc	_____
286c.	Digital Voltmeter Indication	2.5 vdc	_____
287c.	Digital Voltmeter Indication	2.5 vdc	_____
288b.	Digital Voltmeter Indication	2.5 vdc	_____
289b.	Digital Voltmeter Indication	2.5 vdc	_____
290b.	Digital Voltmeter Indication	2.5 vdc	_____
291b.	Digital Voltmeter Indication	2.5 vdc	_____
306.	REG SEL Indication	1101 010 101 010 101	_____
308.	REG SEL Indication	0000 000 000 000 000	_____
310.	REG SEL Indication	0010 101 010 101 010	_____
312.	REG SEL Indication	1111 111 111 111 111	_____
314.	REG SEL Indication	1111 111 111 111 111	_____
315.	REG SEL Indication	1111 111 111 111 111	_____
318.	REG SEL Indication	0000 000 000 000 000	_____
321.	REG SEL Indication	1101 111 111 111 111	_____
324.	REG SEL Indication	1110 111 111 111 111	_____
327.	REG SEL Indication	1111 011 111 111 111	_____
330.	REG SEL Indication	1111 101 111 111 111	_____
333.	REG SEL Indication	1111 110 111 111 111	_____
336.	REG SEL Indication	1111 111 011 111 111	_____
339.	REG SEL Indication	1111 111 101 111 111	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 5 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
342.	REG SEL Indication	1111 111 110 111 111	
345.	REG SEL Indication	1111 111 111 011 111	
348.	REG SEL Indication	1111 111 111 101 111	
351.	REC SEL Indication	1111 111 111 110 111	
354.	REG SEL Indication	1111 111 111 111 011	
357.	REG SEL Indication	1111 111 111 111 101	
360.	REG SEL Indication	1111 111 111 111 110	
376.	RFG SEL Indication	1101 010 101 010 101	
378.	RFG SEL Indication	0000 000 000 000 000	
380.	REG SEL Indication	0010 101 010 101 010	
382.	REG SEL Indication	1111 111 111 111 111	
384.	REG SEL Indication	1111 111 111 111 111	
385.	REG SEL Indication	1111 111 111 111 111	
388.	REG SEL Indication	0011 111 111 111 111	
391.	REG SEL Indication	1101 111 111 111 111	
394.	REG SEL Indication	1110 111 111 111 111	
397.	REG SEL Indication	1111 011 111 111 111	
400.	REG SEL Indication	1111 101 111 111 111	
403.	REG SEL Indication	1111 110 111 111 111	
406.	REG SEL Indication	1111 111 011 111 111	
409.	REG SEL Indication	1111 111 101 111 111	
412.	REG SEL Indication	1111 111 110 111 111	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 6 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
415.	REG SEL Indication	1111 111 111 011 111	
418.	REG SEL Indication	1111 111 111 101 111	
421.	REG SEL Indication	1111 111 111 110 111	
424.	REG SEL Indication	1111 111 111 111 011	
427.	REG SEL Indication	1111 111 111 111 101	
430.	REG SEL Indication	1111 111 111 111 110	
446.	REG SEL Indication	1111 110 101 010 101 (ECP 518, 1101 110 101 010 101)	
448.	REG SEL Indication	1111 100 000 000 000 (ECP 518, 1101 100 000 000 000)	
450.	REG SEL Indication	1111 101 010 101 010	
452.	REG SEL Indication	1111 111 111 111 111	
454.	REG SEL Indication	1111 111 111 111 111	
455.	REG SEL Indication	1111 111 111 111 111	
458.	REG SEL Indication	1111 111 111 111 111	
461.	REG SEL Indication	1111 111 111 111 111 (ECP 518, 1101 111 111 111 111)	
464.	REG SEL Indication	1111 111 111 111 111	
467.	REG SEL Indication	1111 111 111 111 111	
470.	REG SEL Indication	1111 101 111 111 111	
473.	REG SEL Indication	1111 110 111 111 111	
476.	REG SEL Indication	1111 111 011 111 111	
479.	REG SEL Indication	1111 111 101 111 111	
482.	REG SEL Indication	1111 111 110 111 111	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 7 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
485.	REG SEL Indication	1111 111 111 011 111	
488.	REG SEL Indication	1111 111 111 101 111	
491.	REG SEL Indication	1111 111 111 110 111	
494.	REG SEL Indication	1111 111 111 111 011	
497.	REG SEL Indication	1111 111 111 111 101	
500.	REG SEL Indication	1111 111 111 111 110	
501.	REG SEL Indication	Bit 14 is a zero	
502.	REG SEL Indication	Bit 14 is a one	
516.	REG SEL Indication	1100 110 101 010 101	
518.	REC SEL Indication	1100 110 000 000 000	
520.	REG SEL Indication	1100 111 010 101 010	
522.	REG SEL Indication	1100 111 111 111 111	
524.	REG SEL Indication	1100 111 111 111 111	
527.	REG SEL Indication	1100 111 111 111 111	
528.	REG SEL Indication	1100 110 111 111 111	
531.	REG SEL Indication	1100 111 011 111 111	
534.	REG SEL Indication	1100 111 101 111 111	
537.	REG SEL Indication	1100 011 110 111 111	
540.	REG SEL Indication	1100 111 111 011 111	
543.	REG SEL Indication	1100 111 111 101 111	
546.	REG SEL Indication	1100 111 111 110 111	
549.	REG SEL Indication	1100 111 111 111 011	
552.	REG SEL Indication	1100 111 111 111 101	
555.	REG SEL Indication	1100 111 111 111 110	

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 8 OF 12

JDC
NO. 05787
REV. C

JOB INPUT/OUTPUT REGISTERS TEST

Step	Parameter	Specification	Results
563.	Frequency (XC 191)	51,200.00 ± 0.2 cps	
	Amplitude (A)	7 ± 2 volts	
	Pulse Width (B)	3.0 ± 0.5 μsec	
	Rise Time (C)	NMT 0.2 μsec	
	Back Swing (D)	NMT 0.4A	
	Droop (E)	NMT 0.2A	
	Noise (F)	NMT 0.4 volts p-p	
564.	Frequency (XC 048)	3200.0 ± 0.2 cps	
	Amplitude (A)	7 ± 2 volts	
	Pulse Width (B)	3.0 ± 0.5 μsec	
	Rise Time (C)	NMT 0.2 μsec	
	Back Swing (D)	NMT 0.4A	
	Droop (E)	NMT 0.2A	
	Noise (F)	NMT 0.4 volt p-p	
565.	Frequency (XC 139)	3200.0 ± 0.2 cps	
	Amplitude (A)	7 ± 2 volts	
	Pulse Width (B)	3.0 ± 0.5 μsec	
	Rise Time (C)	NMT 0.2 μsec	
	Back Swing (D)	NMT 0.4A	
	Droop (E)	NMT 0.2A	
	Noise (F)	NMT 0.4 volt p-p	

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY. Block II C-Computer

DESCRIPTION

Tests the operation of the CDJ input-output counters, and associated interface circuitry under normal and marginal input conditions.

Rev. Let.	Date	TDRR NO.	PAGES REVISED	JDC	D.S.	MIT	NASA	REFERENCES
A	8-6-68	36667	14, 26	-	-	EA	10	JDC's 05402, 05413, 05414, ND-1021042, and ND-1021043
B	10-17-68	36979	18, 21, 24, 25, 28	3, 4	-	EA	02	
C	3-5-69	37385	12	-	-	EA	04	
IMPORTANT								
INTERVAL As required								
TOOLS AND MATERIAL								

PREPARATION

1. Verify that the Programmer and Monitor and Logic Drawer No. 2 Panels are set-up as specified in JDC 05413.

2. Verify that the XY and RDC Interface Panels are set-up as specified in JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel and the XY Interface panel of the CTS.

CDU X INPUT TEST

3. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

4. Press Keys CL, 00032, 37776.

5. Verify that the RZ display is 0000 000 000 011 010.

6. Verify that the REG SEL display is 0011 111 111 111 110.

7. Press the EXECUTE button.

8. Verify that the LINC indicator is on.

9. Verify that the RG display is 0011 111 111 111 110.

10. Set the AGREEMENT A switches to XXXX 0032.

11. Press the MONITOR indicator switch to the on (illuminated) position.

12. Set the T12 COUNTER STOP switch to the OFF position.

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY Block II C-Computer

13. Set the INCREMENTS INHIBIT switch to the OFF position.

14. Set the AGC INPUT COUNTERS switch to position 3.

15. Press the POSITIVE indicator switch to the on (illuminated) position.

16. Press the SINGLE PULSE indicator switch to the on (illuminated) position.

17. Set the Agreement A switch to SAMPLE.

18. Press the PROCEED button.

19. Press the SINGLE PULSE button.

20. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.

21. Press the SINGLE PULSE button.

22. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.

23. Press the SINGLE PULSE button.

24. Verify that the RG display is 1100 000 000 000 001. Stamp data sheet.

25. Press the POSITIVE indicator switch to the off (extinguished) position.

26. Press the NEGATIVE indicator switch to the on (illuminated) position.

27. Press the SINGLE PULSE button.

28. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.

29. Press the SINGLE PULSE button twice.

30. Verify that the RG display is 0011 111 111 111 110.

31. Set the T12 COUNTER STOP switch to the ON position.

32. Set the INCREMENTS INHIBIT switch to the ON position.

Input Margins

33. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

34. Press Keys CL, 00032, 37776.

35. Verify that the RZ display is 0000 000 000 011 010.

36. Verify that the REG SEL display is 0011 111 111 111 110.

37. Press the EXECUTE button.

38. Verify that the RG display is 0011 111 111 111 110 and the LINC indicator is on.

39. Set the Y MARGINS switch to the V2 (High Zero) position.

40. Press the MONITOR indicator switch to the on (illuminated) position.

41. Press the NEGATIVE indicator switch to the off (extinguished) position.

42. Press the POSITIVE indicator switch to the on (illuminated) position.

43. Set the T12 COUNTER STOP switch to the OFF position.

44. Set the INCREMENTS INHIBIT switch to the OFF position.

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY Block II C-Computer

45. Press the PROCEED button.

46. Press the SINGLE PULSE button.

47. Verify that the RG display is 0011 111 111 111 110.

48. Press the SINGLE PULSE button.

49. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.

50. Press the POSITIVE indicator switch to the off (extinguished) position.

51. Press the NEGATIVE indicator switch to the on (illuminated) position.

52. Press the SINGLE PULSE button.

53. Verify that the RG display is 0011 111 111 111 110.

54. Press the SINGLE PULSE button twice.

55. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.

56. Set the T12 COUNTER STOP switch to the ON position.

57. Set the Y MARGINS switch to the V3 (Low One) position.

58. Set the T12 COUNTER STOP switch to the OFF position.

59. Press the PROCEED button.

60. Press the SINGLE PULSE button.

61. Verify that the RG display is 0011 111 111 111 110.

62. Press the SINGLE PULSE button.

63. Verify that the RG display is 0011 111 111 111 100. Stamp data sheet.

64. Press the NEGATIVE indicator switch to the off (extinguished) position.

65. Press the POSITIVE indicator switch to the on (illuminated) position.

66. Press the SINGLE PULSE button.

67. Verify that the RG display is 0011 111 111 111 101.

68. Press the SINGLE PULSE button twice.

69. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.

70. Set the T12 COUNTER STOP switch to the ON position.

71. Set the INCREMENTS INHIBIT switch to the ON position.

72. Set the Agreement A switch to the OFF position.

73. Set the Y MARGINS switch to the NORM position.

CDU Y INPUT TEST

74. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

75. Press Keys CL, 00033, 37776.

76. Verify that the RZ display is 0000 000 000 011 011.

77. Verify that the REG SEL display is 0011 111 111 111 110.

SUBSYSTEM Computer

ASSY Block II C-Computer

78. Press the EXECUTE button.

79. Verify that the LINC indicator is on.

80. Verify that the RG display is 0011 111 111 111 110.

81. Set the AGREEMENT A switches to XXXX 0033.

82. Press the MONITOR indicator switch to the on (illuminated) position.

83. Set the T12 COUNTER STOP switch to the OFF position.

84. Set the INCREMENTS INHIBIT switch to the OFF position.

85. Set the AGC INPUT COUNTERS switch to position 4.

86. Press the POSITIVE indicator switch to the on (illuminated) position.

87. Press the SINGLE PULSE indicator switch to the on (illuminated) position.

88. Set the Agreement A switch to SAMPLE.

89. Press the PROCEED button.

90. Press the SINGLE PULSE button.

91. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.

92. Press the SINGLE PULSE button.

93. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.

94. Press the SINGLE PULSE button.

95. Verify that the RG display is 1100 000 000 000 001. Stamp data sheet.

96. Press the POSITIVE indicator switch to the off (extinguished) position.

97. Press the NEGATIVE indicator switch to the on (illuminated) position.

98. Press the SINGLE PULSE button.

99. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.

100. Press the SINGLE PULSE button twice.

101. Verify that the RG display is 0011 111 111 111 110.

102. Set the T12 COUNTER STOP switch to the ON position.

103. Set the INCREMENTS INHIBIT switch to the ON position.

Input Margins

104. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

105. Press Keys CL, 00033, 37776.

106. Verify that the RZ display is 0000 000 000 011 011.

107. Verify that the REG SEL display is 0011 111 111 111 110.

108. Press the EXECUTE button.

109. Verify that the RG display is 0011 111 111 111 110 and the LINC indicator is on.

110. Set the Y MARGINS switch to the V2 (High Zero) position.

111. Press the MONITOR indicator switch to the on (illuminated) position.

DATE 18 JAN 68

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 5 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
112. Press the NEGATIVE indicator switch to the off (extinguished) position.		130. Press the PROCEED button.
113. Press the POSITIVE indicator switch to the on (illuminated) position.		131. Press the SINGLE PULSE button.
114. Set the T12 COUNTER STOP switch to the OFF position.		132. Verify that the RG display is 0011 111 111 111 101.
115. Set the INCREMENTS INHIBIT switch to the OFF position.		133. Press the SINGLE PULSE button.
116. Press the PROCEED button.		134. Verify that the RG display is 0011 111 111 111 100. Stamp data sheet.
117. Press the SINGLE PULSE button.		135. Press the NEGATIVE indicator switch to the off (extinguished) position.
118. Verify that the RG display is 0011 111 111 111 110.		136. Press the POSITIVE indicator switch to the on (illuminated) position.
119. Press the SINGLE PULSE button.		137. Press the SINGLE PULSE button.
120. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.		138. Verify that the RG display is 0011 111 111 111 101.
121. Press the POSITIVE indicator switch to the off (extinguished) position.		139. Press the SINGLE PULSE button twice.
122. Press the NEGATIVE indicator switch to the on (illuminated) position.		140. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.
123. Press the SINGLE PULSE button.		141. Set the T12 COUNTER STOP switch to the ON position.
124. Verify that the RG display is 0011 111 111 111 110.		142. Set the INCREMENTS INHIBIT switch to the ON position.
125. Press the SINGLE PULSE button twice.		143. Set the Agreement A switch to the OFF position.
126. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.		144. Set the Y MARGINS switch to the NORM position.
127. Set the T12 COUNTER STOP switch to the ON position.		<u>CDU Z INPUT TEST</u>
128. Set the Y MARGINS switch to the V3 (Low One) position.		145. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
129. Set the T12 COUNTER STOP switch to the OFF position.		

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 6 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
146. Press Keys CL, 00034, 37776.		163. Press the SINGLE PULSE button.
147. Verify that the RZ display is 0000 000 000 011 100.		164. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.
148. Verify that the REG SEL display is 0011 111 111 111 110.		165. Press the SINGLE PULSE button.
149. Press the EXECUTE button.		166. Verify that the RG display is 1100 000 000 000 001. Stamp data sheet.
150. Verify that the LINC indicator is on.		167. Press the POSITIVE indicator switch to the off (extinguished) position.
151. Verify that the RG display is 0011 111 111 111 110.		168. Press the NEGATIVE indicator switch to the on (illuminated) position.
152. Set the AGREEMENT A switches to XXXX 0034.		169. Press the SINGLE PULSE button.
153. Press the MONITOR indicator switch to the on (illuminated) position.		170. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.
154. Set the T12 COUNTER STOP switch to the OFF position.		171. Press the SINGLE PULSE button twice.
155. Set the INCREMENTS INHIBIT switch to the OFF position.		172. Verify that the RG display is 0011 111 111 111 110.
156. Set the AGC INPUT COUNTERS switch to position 5.		173. Set the T12 COUNTER STOP switch to the ON position.
157. Press the POSITIVE indicator switch to the on (illuminated) position.		174. Set the INCREMENTS INHIBIT switch to the ON position.
158. Press the SINGLE PULSE indicator switch to the on (illuminated) position.		<u>Input Margins</u>
159. Set the Agreement A switch to SAMPLE.		175. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
160. Press the PROCEED button.		176. Press Keys CL, 00034, 37776.
161. Press the SINGLE PULSE button.		177. Verify that the RZ display is 0000 000 000 011 100.
162. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.		178. Verify that the REG SEL display is 0011 111 111 111 110.

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 7 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
179. Press the EXECUTE button.		196. Press the SINGLE PULSE button twice.
180. Verify that the RG display is 0011 111 111 111 110 and the LINC indicator is on.		197. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.
181. Set the Y MARGINS switch to the V2 (High Zero) position.		198. Set the T12 COUNTER STOP switch to the ON position.
182. Press the MONITOR indicator switch to the on (illuminated) position.		199. Set the Y MARGINS switch to the V3 (Low One) position.
183. Press the NEGATIVE indicator switch to the off (extinguished) position.		200. Set the T12 COUNTER STOP switch to the OFF position.
184. Press the POSITIVE indicator switch to the on (illuminated) position.		201. Press the PROCEED button.
185. Set the T12 COUNTER STOP switch to the OFF position.		202. Press the SINGLE PULSE button.
186. Set the INCREMENTS INHIBIT switch to the OFF position.		203. Verify that the RG display is 0011 111 111 111 101.
187. Press the PROCEED button.		204. Press the SINGLE PULSE button.
188. Press the SINGLE PULSE button.		205. Verify that the RG display is 0011 111 111 111 100. Stamp data sheet.
189. Verify that the RG display is 0011 111 111 111 110.		206. Press the NEGATIVE indicator switch to the off (extinguished) position.
190. Press the SINGLE PULSE button.		207. Press the POSITIVE indicator switch to the on (illuminated) position.
191. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.		208. Press the SINGLE PULSE button.
192. Press the POSITIVE indicator switch to the off (extinguished) position.		209. Verify that the RG display is 0011 111 111 111 101.
193. Press the NEGATIVE indicator switch to the on (illuminated) position.		210. Press the SINGLE PULSE button twice.
194. Press the SINGLE PULSE button.		211. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.
195. Verify that the RG display is 0011 111 111 111 110.		212. Set the T12 COUNTER STOP switch to the ON position.

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 8 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
213. Set the INCREMENTS INHIBIT switch to the ON position.		229. Press the SINGLE PULSE indicator switch to the on (illuminated) position.
214. Set the Agreement A switch to the OFF position.		230. Set the Agreement A switch to SAMPLE.
215. Set the Y MARGINS switch to the NORM position.		231. Press the PROCEED button.
<u>CDU T INPUT TEST</u>		232. Press the SINGLE PULSE button.
216. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		233. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.
217. Press Keys CL, 00035, 37776.		234. Press the SINGLE PULSE button.
218. Verify that the RZ display is 0000 000 000 011 101.		235. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.
219. Verify that the REG SEL display is 0011 111 111 111 110.		236. Press the SINGLE PULSE button.
220. Press the EXECUTE button.		237. Verify that the RG display is 1100 000 000 000 001. Stamp data sheet.
221. Verify that the LINC indicator is on.		238. Press the POSITIVE indicator switch to the off (extinguished) position.
222. Verify that the RG display is 0011 111 111 111 110.		239. Press the NEGATIVE indicator switch to the on (illuminated) position.
223. Set the AGREEMENT A switches to XXXX 0035.		240. Press the SINGLE PULSE button.
224. Press the MONITOR indicator switch to the on (illuminated) position.		241. Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.
225. Set the T12 COUNTER STOP switch to the OFF position.		242. Press the SINGLE PULSE button twice.
226. Set the INCREMENTS INHIBIT switch to the OFF position.		243. Verify that the RG display is 0011 111 111 111 110.
227. Set the AGC INPUT COUNTERS switch to position 2.		244. Set the T12 COUNTER STOP switch to the ON position.
228. Press the POSITIVE indicator switch to the on (illuminated) position.		245. Set the INCREMENTS INHIBIT switch to the ON position.

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC	05788	REV	C	PAGE	9	OF	28
SUBSYSTEM	Computer	ASSY	Block II C-Computer						
<u>Input Margins</u>		262. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.							
246. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		263. Press the POSITIVE indicator switch to the off (extinguished) position.							
247. Press Keys CL, 00035, 37776.		264. Press the NEGATIVE indicator switch to the on (illuminated) position.							
248. Verify that the RZ display is 0000 000 000 011 101.		265. Press the SINGLE PULSE button.							
249. Verify that the REG SEL display is 0011 111 111 111 110.		266. Verify that the RG display is 0011 111 111 111 110.							
250. Press the EXECUTE button.		267. Press the SINGLE PULSE button twice.							
251. Verify that the RC display is 0011 111 111 111 110 and the LINC indicator is on.		268. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.							
252. Set the Y MARGINS switch to the V2 (High Zero) position.		269. Set the T12 COUNTER STOP switch to the ON position.							
253. Press the MONITOR indicator switch to the on (illuminated) position.		270. Set the Y MARGINS switch to the V3 (Low One) position.							
254. Press the NEGATIVE indicator switch to the off (extinguished) position.		271. Set the T12 COUNTER STOP switch to the OFF position.							
255. Press the POSITIVE indicator switch to the on (illuminated) position.		272. Press the PROCEED button.							
256. Set the T12 COUNTER STOP switch to the OFF position.		273. Press the SINGLE PULSE button.							
257. Set the INCREMENTS INHIBIT switch to the OFF position.		274. Verify that the RG display is 0011 111 111 111 101.							
258. Press the PROCEED button.		275. Press the SINGLE PULSE button.							
259. Press the SINGLE PULSE button.		276. Verify that the RG display is 0011 111 111 111 100. Stamp data sheet.							
260. Verify that the RG display is 0011 111 111 111 110.		277. Press the NEGATIVE indicator switch to the off (extinguished) position.							
261. Press the SINGLE PULSE button.		278. Press the POSITIVE indicator switch to the on (illuminated) position.							
DATE 18 JAN 68									

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC	05788	REV	C	PAGE	10	OF	28
SUBSYSTEM	Computer	ASSY	Block II C-Computer						
279.	Press the SINGLE PULSE button.	296.	Set the T12 COUNTER STOP switch to the OFF position.						
280.	Verify that the RG display is 0011 111 111 111 101.	297.	Set the INCREMENTS INHIBIT switch to the OFF position.						
281.	Press the SINGLE PULSE button twice.	298.	Set the AGC INPUT COUNTERS switch to position 1.						
282.	Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.	299.	Press the POSITIVE indicator switch to the on (illuminated) position.						
283.	Set the T12 COUNTER STOP switch to the ON position.	300.	Press the SINGLE PULSE indicator switch to the on (illuminated) position.						
284.	Set the INCREMENTS INHIBIT switch to the ON position.	301.	Set the Agreement A switch to SAMPLE.						
285.	Set the Agreement A switch to the OFF position.	302.	Press the PROCEED button.						
286.	Set the Y MARGINS switch to the NORM position.	303.	Press the SINGLE PULSE button.						
<u>CDU S INPUT TEST</u>		304.	Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.						
287.	Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	305.	Press the SINGLE PULSE button.						
288.	Press Keys CL, 0036, 37776.	306.	Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.						
289.	Verify that the RZ display is 0000 000 000 011 110.	307.	Press the SINGLE PULSE button.						
290.	Verify that the REG SEL display is 0011 111 111 111 110.	308.	Verify that the RG display is 1100 000 000 000 001. Stamp data sheet.						
291.	Press the EXECUTE button.	309.	Press the POSITIVE indicator switch to the off (extinguished) position.						
292.	Verify that the LINC indicator is on.	310.	Press the NEGATIVE indicator switch to the on (illuminated) position.						
293.	Verify that the RG display is 0011 111 111 111 110.	311.	Press the SINGLE PULSE button.						
294.	Set the AGREEMENT A switches to XXXX 0036.	312.	Verify that the RG display is 1100 000 000 000 000. Stamp data sheet.						
295.	Press the MONITOR indicator switch to the on (illuminated) position.								

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788	REV C	PAGE 11 OF 28
SUBSYSTEM	Computer	ASSY	Block II C-Computer	
313. Press the SINGLE PULSE button twice.		328. Set the INCREMENTS INHIBIT switch to the OFF position.		
314. Verify that the RG display is 0011 111 111 111 110.		329. Press the PROCEED button.		
315. Set the T12 COUNTER STOP switch to the ON position.		330. Press the SINGLE PULSE button.		
316. Set the INCREMENTS INHIBIT switch to the ON position.		331. Verify that the RG display is 0011 111 111 111 110.		
		332. Press the SINGLE PULSE button.		
<u>Input Margins</u>		333. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.		
317. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		334. Press the POSITIVE indicator switch to the off (extinguished) position.		
318. Press Keys CL, 00036, 37776.		335. Press the NEGATIVE indicator switch to the on (illuminated) position.		
319. Verify that the RZ display is 0000 000 000 011 110.		336. Press the SINGLE PULSE button.		
320. Verify that the REG SEL display is 0011 111 111 111 110.		337. Verify that the RG display is 0011 111 111 111 110.		
321. Press the EXECUTE button.		338. Press the SINGLE PULSE button twice.		
322. Verify that the RG display is 0011 111 111 111 110 and the LINC indicator is on.		339. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.		
323. Set the Y MARGINS switch to the V2 (High Zero) position.		340. Set the T12 COUNTER STOP switch to the ON position.		
324. Press the MONITOR indicator switch to the on (illuminated) position.		341. Set the Y MARGINS switch to the V3 (Low One) position.		
325. Press the NEGATIVE indicator switch to the off (extinguished) position.		342. Set the T12 COUNTER STOP switch to the OFF position.		
326. Press the POSITIVE indicator switch to the on (illuminated) position.		343. Press the PROCEED button.		
327. Set the T12 COUNTER STOP switch to the OFF position.		344. Press the SINGLE PULSE button.		

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC	05788	REV	C	PAGE	12	OF	28
SUBSYSTEM	Computer	ASSY	Block II C-Computer						
345. Verify that the RG display is 0011 111 111 111 101.	361. Prepare the CTS FREQUENCY COUNTER for operation as specified in step 1 of JDC 05402.								
346. Press the SINGLE PULSE button.	361A. Set A SLOPE switch on CTS FRE- QUENCY COUNTER to + position.								
347. Verify that the RG display is 0011 111 111 111 100. Stamp data sheet.	NOTE: During this test, the FREQUENCY COUNTER is to be operated as de- scribed under PROCEDURE on JDC 05402.								
348. Press the NEGATIVE indicator switch to the off (extinguished) position.	362. Press the KEYBOARD LOAD indi- cator switch to the on (illuminated) position.								
349. Press the POSITIVE indicator switch to the on (illuminated) position.	363. Press Keys CL, 00050, 77777.								
350. Press the SINGLE PULSE button.	364. Verify that the RZ display is 0000 000 000 101 000.								
351. Verify that the RG display is 0011 111 111 111 101.	365. Verify that the REG SEL display is 0011 111 111 111 111.								
352. Press the SINGLE PULSE button twice.	366. Press the EXECUTE button.								
353. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.	367. Verify that the LINC indicator is on.								
354. Set the T12 COUNTER STOP switch to the ON position.	368. Press the READ AGC indicator switch to the on (illuminated) position.								
355. Set the INCREMENTS INHIBIT switch to the ON position.	369. Press Keys CL, 0050.								
356. Set the Agreement A switch to the OFF position.	370. Verify that the RZ display is 0000 000 000 101 000.								
357. Set the Y MARGINS switch to the NORM position.	371. Press the EXECUTE button.								
<u>CDU X OUTPUT TEST</u>									
358. Verify that the STRT1/STRT2 switch on the Buffer Circuit Assembly is in the OFF position.	372. Verify that the OINC indicator is on.								
359. Press the LOAD CHAN S 510 OHMS indicator switch to the on (illuminated) position.	373. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.								
360. Set the FREQ+ PHASE switch to the FRS S — T position.	374. Press the KEYBOARD LOAD indi- cator switch to the on (illuminated) position.								

DATE 18 JAN 68

375. Press Keys CL, 00050, 52525.
376. Verify that the RZ display is 0000 000 000 101 000.
377. Verify that the REG SEL display is 0101 010 101 010 101.
378. Press the EXECUTE button.
379. Verify that the LINC indicator is on.
380. Press the READ AGC indicator switch to the on (illuminated) position.
381. Press Keys CL, 0050.
382. Verify that the RZ display is 0000 000 000 101 000.
383. Press the EXECUTE button.
384. Verify that the OINC indicator is on.
385. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.
386. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
387. Press Keys CL, 00050, 00000.
388. Verify that the RZ display is 0000 000 000 101 000.
389. Verify that the REG SEL display is 0000 000 000 000 000.
390. Press the EXECUTE button.
391. Verify that the LINC indicator is on.
392. Press the READ AGC indicator switch to the on (illuminated) position.
393. Press Keys CL, 0050.
394. Verify that the RZ display is 0000 000 000 101 000.
395. Press the EXECUTE button.
396. Verify that the OINC indicator is on.
397. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.
398. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
399. Press Keys CL, 00014, 40000.
400. Verify that the RZ display is 0000 000 000 001 100.
401. Verify that the REG SEL display is 0100 500 000 000 000.
402. Press the CHANNEL button.
403. Press the EXECUTE button.
404. Verify that the LINC indicator is on.
405. Press Keys CL, 00050, 02000.
406. Verify that the RZ display is 0000 000 000 101 000.
407. Verify that the REG SEL display is 0000 010 000 000 000.
408. Press the EXECUTE button.
409. Set the CHANNEL S switches to the 201 position.
410. Set the INHIBIT INTERRUPT switch to the OFF position.
411. Press the MONITOR indicator switch to the on (illuminated) position, and set the AGC INPUT COUNTER switch to position 3.

DATE 18 JAN 68

412. Set the INCREMENTS INHIBIT switch to the OFF position.
413. Set the T12 COUNTER STOP switch to the OFF position.
414. Press the RESET button on the FREQUENCY COUNTER.
415. Press the PROCEED button.
416. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.
417. Set the T12 COUNTER STOP switch to the ON position.
418. Set the INCREMENTS INHIBIT switch to the ON position.
419. Set the INHIBIT INTERRUPT switch to the ON position.
420. Press the READ AGC indicator switch to the on (illuminated) position.
421. Press Keys CL, 0014.
422. Verify that the RZ display is 0000 000 000 001 100.
423. Press the CHANNEL button.
424. Press the EXECUTE button.
425. Verify that the OINC indicator is on.
426. Verify that BIT 16 of the REG SEL display is a "0". Stamp data sheet.
427. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
428. Press Keys CL, 00014, 40000.
429. Verify that the RZ display is 0000 000 000 001 100.
430. Verify that the REG SEL display is 0100 000 000 000 000.
431. Press the CHANNEL button.
432. Press the EXECUTE button.
433. Verify that the LINC indicator is on.
434. Press Keys CL, 00050, 75777.
435. Verify that the RZ display is 0000 000 000 101 000.
436. Verify that the REG SEL display is 0111 101 111 111 111.
437. Press the EXECUTE button.
438. Set the CHANNEL S switches to the 202 position.
439. Press the MONITOR indicator switch to the on (illuminated) position.
440. Set the INCREMENTS INHIBIT switch to the OFF position.
441. Set the INHIBIT INTERRUPT switch to the OFF position.
442. Set the T12 COUNTER STOP switch to the OFF position.
443. Press the RESET button on the FREQUENCY COUNTER.
444. Press the PROCEED button.
445. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.

DATE 18 JAN 68

446. Set the T12 COUNTER STOP switch to the ON position.
447. Set the INCREMENTS INHIBIT switch to the ON position.
448. Set the INHIBIT INTERRUPT switch to the ON position.
449. Press the READ AGC indicator switch to the on (illuminated) position.
450. Press Keys CL, 0014.
451. Verify that the RZ display is 0000 000 000 001 100.
452. Press the CHANNEL button.
453. Press the EXECUTE button.
454. Verify that the OINC indicator is on.
455. Verify that BIT 16 of the REG SEL display is a "0". Stamp data sheet.
- CDU Y OUTPUT TEST
456. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
457. Press Keys CL, 00051, 77777.
458. Verify that the RZ display is 0000 000 000 101 001.
459. Verify that the REG SEL display is 0111 111 111 111 111.
460. Press the EXECUTE button.
461. Verify that the LINC indicator is on.
462. Press the READ AGC indicator switch to the on (illuminated) position.
463. Press Keys CL, 0051.
464. Verify that the RZ display is 0000 000 000 101 001.
465. Press the EXECUTE button.
466. Verify that the OINC indicator is on.
467. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.
468. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
469. Press Keys CL, 00051, 52525.
470. Verify that the RZ display is 0000 000 000 101 001.
471. Verify that the REG SEL display is 0101 010 101 010 101.
472. Press the EXECUTE button.
473. Verify that the LINC indicator is on.
474. Press the READ AGC indicator switch to the on (illuminated) position.
475. Press Keys CL, 0051.
476. Verify that the RZ display is 0000 000 000 101 001.
477. Press the EXECUTE button.
478. Verify that the OINC indicator is on.
479. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.
480. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

DATE 18 JAN 68

481. Press Keys CL, 00051, 09000.
482. Verify that the RZ display is 0000 000 000 101 001.
483. Verify that the REG SEL display is 0000 000 000 000 000.
484. Press the EXECUTE button.
485. Verify that the LINC indicator is on.
486. Press the READ AGC indicator switch to the on (illuminated) position.
487. Press Keys CL, 0051.
488. Verify that the RZ display is 0000 000 000 101 001.
489. Press the EXECUTE button.
490. Verify that the OINC indicator is on.
491. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.
492. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
493. Press Keys CL, 00014, 20000.
494. Verify that the RZ display is 0000 000 000 001 100.
495. Verify that the REG SEL display is 0010 000 000 000 000.
496. Press the CHANNEL button.
497. Press the EXECUTE button.
498. Verify that the LINC indicator is on.
499. Press Keys CL, 00051, 02000.
500. Verify that the RZ display is 0000 000 000 101 001.
501. Verify that the REG SEL display is 0000 010 000 000 000.
502. Press the EXECUTE button.
503. Set the CHANNEL S switches to the 203 position.
504. Set the INHIBIT INTERRUPT switch to the OFF position.
505. Press the MONITOR indicator switch to the on (illuminated) position.
506. Set the INCREMENTS INHIBIT switch to the OFF position.
507. Set the T12 COUNTER STOP switch to the OFF position and set the AGC INPUT COUNTER switch to position 4.
508. Press the RESET button on the FREQUENCY COUNTER.
509. Press the PROCEED button.
510. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.
511. Set the T12 COUNTER STOP switch to the ON position.
512. Set the INCREMENTS INHIBIT switch to the ON position.
513. Set the INHIBIT INTERRUPT switch to the ON position.
514. Press the READ AGC indicator switch to the on (illuminated) position.
515. Press Keys CL, 0014.

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C	PAGE 17 OF 28
SUBSYSTEM	Computer	ASSY	Block II C-Computer
516. Verify that the RZ display is 0000 000 000 001 100.	535. Set the INHIBIT INTERRUPT switch to the OFF position.		
517. Press the CHANNEL button.	536. Set the T12 COUNTER STOP switch to the OFF position.		
518. Press the EXECUTE button.	537. Press the RESET button on the FREQUENCY COUNTER.		
519. Verify that the OINC indicator is on.	538. Press the PROCEED button.		
520. Verify that BIT 14 of the REG SEL display is a "0". Stamp data sheet.	539. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.		
521. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	540. Set the T12 COUNTER STOP switch to the ON position.		
522. Press Keys CL, 00014, 20000.	541. Set the INCREMENTS INHIBIT switch to the ON position.		
523. Verify that the RZ display is 0000 000 000 001 100.	542. Set the INHIBIT INTERRUPT switch to the ON position.		
524. Verify that the REG SEL display is 0010 000 000 000 000.	543. Press the READ AGC indicator switch to the on (illuminated) position.		
525. Press the CHANNEL button.	544. Press Keys CL, 0014.		
526. Press the EXECUTE button.	545. Verify that the RZ display is 0000 000 000 001 100.		
527. Verify that the LINC indicator is on.	546. Press the CHANNEL button.		
528. Press Keys CL, 00051, 75777.	547. Press the EXECUTE button.		
529. Verify that the RZ display is 0000 000 000 101 001.	548. Verify that the OINC indicator is on.		
530. Verify that the REG SEL display is 0111 101 111 111 111.	549. Verify that BIT 14 of the REG SEL display is a "0". Stamp data sheet.		
531. Press the EXECUTE button.			
532. Set the CHANNEL switches to the 204 position.			
533. Press the MONITOR indicator switch to the on (illuminated) position.			
534. Set the INCREMENTS INHIBIT switch to the OFF position.			
			</

DATE 18 JAN 68

JOB CDU COUNTERS TEST	JDC 05788 REV C PAGE 18 OF 28
SUBSYSTEM Computer	ASSY Block II C-Computer
552. Verify that the RZ display is 0000 000 000 101 010.	570. Verify that the RZ display is 0000 000 000 101 010.
553. Verify that the REG SEL display is 0111 111 111 111 111.	571. Press the EXECUTE button.
554. Press the EXECUTE button.	572. Verify that the OINC indicator is on.
555. Verify that the LINC indicator is on.	573. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.
556. Press the READ AGC indicator switch to the on (illuminated) position.	574. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
557. Press Keys CL, 0052.	575. Press Keys CL, 00052, 60300.
558. Verify that the RZ display is 0000 000 000 101 010.	576. Verify that the RZ display is 0000 000 000 101 010.
559. Press the EXECUTE button.	577. Verify that the REG SEL display is 0000 000 000 000 000.
560. Verify that the OINC indicator is on.	578. Press the EXECUTE button.
561. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.	579. Verify that the LINC indicator is on.
562. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	580. Press the READ AGC indicator switch to the on (illuminated) position.
563. Press Keys CL, 00052, 52525.	581. Press Keys CL, 0052.
564. Verify that the RZ display is 0000 000 000 101 010.	582. Verify that the RZ display is 0000 000 000 101 010.
565. Verify that the REG SEL display is 0101 010 101 010 101.	583. Press the EXECUTE button.
566. Press the EXECUTE button.	584. Verify that the OINC indicator is on.
567. Verify that the LINC indicator is on.	585. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.
568. Press the READ AGC indicator switch to the on (illuminated) position.	586. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
569. Press Keys CL, 0052.	587. Press Keys CL, 00014, 10000.

DATE 18 JAN 68

JOB CDU COUNTERS TEST	JDC 05788 REV C PAGE 19 OF 28
SUBSYSTEM Computer	ASSY Block II C-Computer
588. Verify that the RZ display is 0000 000 000 001 100.	605. Set the T12 COUNTER STOP switch to the ON position.
589. Verify that the REG SEL display is 0001 000 000 000 000.	606. Set the INCREMENTS INHIBIT switch to the ON position.
590. Press the CHANNEL button.	607. Set the INHIBIT INTERRUPT switch to the ON position.
591. Press the EXECUTE button.	608. Press the READ AGC indicator switch to the on (illuminated) position.
592. Verify that the LINC indicator is on.	609. Press Keys CL, 0014.
593. Press Keys CL, 00052, 02000.	610. Verify that the RZ display is 0000 000 000 001 100.
594. Verify that the RZ display is 0000 010 000 000 000.	611. Press the CHANNEL button.
595. Verify that the REG SEL display is 0000 010 000 000 000.	612. Press the EXECUTE button.
596. Press the EXECUTE button.	613. Verify that the OINC indicator is on.
597. Set the CHANNEL S switches to the 205 position.	614. Verify that BIT 13 of the REG SEL display is a "0". Stamp data sheet.
598. Set the INHIBIT INTERRUPT switch to the OFF position.	615. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
599. Press the MONITOR indicator switch to the on (illuminated) position.	616. Press Keys CL, 00014, 10000.
600. Set the INCREMENTS INHIBIT switch to the OFF position.	617. Verify that the RZ display is 0000 000 000 001 100.
601. Set the T12 COUNTER STOP switch to the OFF position.	618. Verify that the REG SEL display is 0001 000 000 000 000.
602. Press the RESET button on the FREQUENCY COUNTER.	619. Press the CHANNEL button.
603. Press the PROCEED button.	620. Press the EXECUTE button.
604. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.	621. Verify that the LINC indicator is on.
	622. Press Keys CL, 00052, 75777.

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788	REV C	PAGE 20 OF 28
SUBSYSTEM	Computer	ASSY	Block II C-Computer	
623. Verify that the RZ display is 0000 000 000 101 010.		640. Press the CHANNEL button.		
624. Verify that the REG SEL display is 0111 101 111 111 111.		641. Press the EXECUTE button.		
625. Press the EXECUTE button.		642. Verify that the OINC indicator is on.		
626. Set the CHANNEL S switches to the 206 position.		643. Verify that BIT 13 of the REG SEL display is a "0". Stamp data sheet.		
		<u>CDU T OUTPUT TEST</u>		
627. Press the MONITOR indicator switch to the on (illuminated) position.		644. Set the CHANNEL S switches to position 101.		
628. Set the INCREMENTS INHIBIT switch to the OFF position.		645. Press the LOAD CHAN T 510 OHMS switch to the on (illuminated) position.		
629. Set the INHIBIT INTERRUPT switch to the OFF position.		646. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		
630. Set the T12 COUNTER STOP switch to the OFF position.		647. Press Keys CL, 00053, 77777.		
631. Press the RESET button on the FREQUENCY COUNTER.		648. Verify that the RZ display is 0000 000 000 101 011.		
632. Press the PROCEED button.		649. Verify that the REG SEL display is 0111 111 111 111 111.		
633. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.		650. Press the EXECUTE button.		
634. Set the T12 COUNTER STOP switch to the ON position.		651. Verify that the LINC indicator is on.		
635. Set the INCREMENTS INHIBIT switch to the ON position.		652. Press the READ AGC Indicator switch to the on (illuminated) position.		
636. Set the INHIBIT INTERRUPT switch to the ON position.		653. Press Keys CL, 0053.		
637. Press the READ AGC indicator switch to the on (illuminated) position.		654. Verify that the RZ display is 0000 000 000 101 011.		
638. Press Keys CL, 0014.		655. Press the EXECUTE button.		
639. Verify that the RZ display is 0000 000 000 001 100.		656. Verify that the OINC indicator is on.		
		657. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.		

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 21 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
658. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	677. Press Keys CL, 0053.	
659. Press Keys CL, 00053, 52525.	678. Verify that the RZ display is 0000 000 000 101 011.	
660. Verify that the RZ display is 0000 000 000 101 011.	679. Press the EXECUTE button.	
661. Verify that the REG SEL display is 0101 010 101 010 101.	680. Verify that the OINC indicator is on.	
662. Press the EXECUTE button.	681. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.	
663. Verify that the LINC indicator is on.	682. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	
664. Press the READ AGC indicator switch to the on (illuminated) position.	683. Press Keys CL, 00014, 04000.	
665. Press Keys CL, 0053.	684. Verify that the RZ display is 0000 000 000 001 100.	
666. Verify that the RZ display is 0000 000 000 101 011.	685. Verify that the REG SEL display is 0000 100 000 000 000.	
667. Press the EXECUTE button.	686. Press the CHANNEL button.	
668. Verify that the OINC indicator is on.	687. Press the EXECUTE button.	
669. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.	688. Verify that the LINC indicator is on.	
670. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	689. Press Keys CL, 00053, 02000.	
671. Press Keys CL, 00053, 00000.	690. Verify that the RZ display is 0000 000 000 101 011.	
672. Verify that the RZ display is 0000 000 000 101 011.	691. Verify that the REG SEL display is 0000 010 000 000 000.	
673. Verify that the REG SEL display is 0000 000 000 000 000.	692. Press the EXECUTE button.	
674. Press the EXECUTE button.	693. Set the CHANNEL T switches to the 203 position.	
675. Verify that the LINC indicator is on.	694. Set the FREQ+ PHASE switch to the FRT T → S position.	
676. Press the READ AGC indicator switch to the on (illuminated) position.	695. Set the INHIBIT INTERRUPT switch to the OFF position.	

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 22 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
683. Press the MONITOR indicator switch to the on (illuminated) position.	713. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	
697. Set the AGC INPUT COUNTERS switch to position 2.	714. Press Keys CL, 00014, 04000.	
698. Set the INCREMENTS INHIBIT switch to the OFF position.	715. Verify that the RZ display is 0000 000 000 001 100.	
699. Set the T12 COUNTER STOP switch to the OFF position.	716. Verify that the REG SEL display is 0000 100 000 000 000.	
700. Press the RESET button on the FREQUENCY COUNTER.	717. Press the CHANNEL button.	
701. Press the PROCEED button.	718. Press the EXECUTE button.	
702. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.	719. Verify that the LINC indicator is on.	
703. Set the T12 COUNTER STOP switch to the ON position.	720. Press Keys CL, 00053, 75777.	
704. Set the INCREMENTS INHIBIT switch to the ON position.	721. Verify that the RZ display is 0000 000 000 101 011.	
705. Set the INHIBIT INTERRUPT switch to the ON position.	722. Verify that the REG SEL display is 0111 101 111 111 111.	
706. Press the READ AGC indicator switch to the on (illuminated) position.	723. Press the EXECUTE button.	
707. Press Keys CL, 0014.	724. Set the CHANNEL T switches to the 204 position.	
708. Verify that the RZ display is 0000 000 000 001 100.	725. Press the POSITIVE indicator switch to the off position, and press the NEGATIVE indicator switch to the on (illuminated) position.	
709. Press the CHANNEL button.	726. Press the MONITOR indicator switch to the on (illuminated) position.	
710. Press the EXECUTE button.	727. Set the INCREMENTS INHIBIT switch to the OFF position.	
711. Verify that the OINC indicator is on.	728. Set the INHIBIT INTERRUPT switch to the OFF position.	
712. Verify that BIT 12 of the REG SEL display is a "0". Stamp data sheet.	729. Set the T12 COUNTER STOP switch to the OFF position.	

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 23 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
730. Press the RESET button on the FREQUENCY COUNTER.	747. Press the EXECUTE button.	
731. Press the PROCEED button.	748. Verify that the LINC indicator is on.	
732. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.	749. Press the READ AGC indicator switch to the on (illuminated) position.	
733. Set the T12 COUNTER STOP switch to the ON position.	750. Press Keys CL, 0054.	
734. Set the INCREMENTS INHIBIT switch to the ON position.	751. Verify that the RZ display is 0000 000 000 101 100.	
735. Set the INHIBIT INTERRUPT switch to the ON position.	752. Press the EXECUTE button.	
736. Press the READ AGC indicator switch to the on (illuminated) position.	753. Verify that the OINC indicator is on.	
737. Press Keys CL, 0014.	754. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.	
738. Verify that the RZ display is 0000 000 000 001 100.	755. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	
739. Press the CHANNEL button.	756. Press Keys CL, 00054, 52525.	
740. Press the EXECUTE button.	757. Verify that the RZ display is 0000 000 000 101 100.	
741. Verify that the OINC indicator is on.	758. Verify that the REG SEL display is 0101 010 101 010 101.	
742. Verify that BIT 12 of the REG SEL display is a "0". Stamp data sheet.	759. Press the EXECUTE button.	
CDU S OUTPUT TEST		
743. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	760. Verify that the LINC indicator is on.	
744. Press Keys CL, 00054, 77777.	761. Press the READ AGC indicator switch to the on (illuminated) position.	
745. Verify that the RZ display is 0000 000 000 101 100.	762. Press Keys CL, 0054.	
746. Verify that the REG SEL display is 0111 111 111 111 111.	763. Verify that the RZ display is 0000 000 000 101 100.	
	764. Press the EXECUTE button.	
	765. Verify that the OINC indicator is on.	

DATE 18 JAN 68

JOB	CDU COUNTERS TEST	JDC 05788 REV C PAGE 24 OF 28
SUBSYSTEM	Computer	ASSY Block II C-Computer
766. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.	784. Press the CHANNEL button.	
767. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	785. Press the EXECUTE button.	
768. Press Keys CL, 00054, 00000.	786. Verify that the LINC indicator is on.	
769. Verify that the RZ display is 0000 000 000 101 100.	787. Press Keys CL, 00054, 02000.	
770. Verify that the REG SEL display is 0000 000 000 000 000.	788. Verify that the RZ display is 0000 000 000 101 100.	
771. Press the EXECUTE button.	789. Verify that the REG SEL display is 0000 010 000 000 000.	
772. Verify that the LINC indicator is on.	790. Press the EXECUTE button.	
773. Press the READ AGC indicator switch to the on (illuminated) position.	791. Set the CHANNEL T switches to the 201 position.	
774. Press Keys CL, 0054.	792. Set the INHIBIT INTERRUPT switch to the OFF position.	
775. Verify that the RZ display is 0000 000 000 101 100.	793. Press the MONITOR indicator switch to the on (illuminated) position.	
776. Press the EXECUTE button.	794. Set the INCREMENTS INHIBIT switch to the OFF position.	
777. Verify that the OINC indicator is on.	795. Set the T12 COUNTER STOP switch to the OFF position.	
778. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.	796. Press the NEGATIVE indicator switch to the on position, and press the POSITIVE indicator switch to the on position.	
779. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	797. Press the RESET button on the FREQUENCY COUNTER.	
780. Set the AGC INPUT COUNTER switch to position 1.	798. Press the PROCEED button.	
781. Press Keys CL, 00014, 02000.	799. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.	
782. Verify that the RZ display is 0000 000 000 001 100.	800. Set the T12 COUNTER STOP switch to the ON position.	
783. Verify that the REG SEL display is 0000 010 000 000 000.		

DATE 18 JAN 68

SUBSYSTEM Computer

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| 801. Set the INCREMENTS INHIBIT switch to the ON position. | 820. Press the EXECUTE button. |
| 802. Set the INHIBIT INTERRUPT switch to the ON position. | 821. Set the CHANNEL T switches to the 202 position. |
| 803. Press the READ AGC indicator switch to the on (illuminated) position. | 822. Press the MONITOR indicator switch to the on (illuminated) position. |
| 804. Press Keys CL, 0014. | 823. Set the AGC INPUT COUNTERS to position 1. |
| 805. Verify that the RZ display is 0000 000 000 001 100. | 824. Press the NEGATIVE indicator switch to the on position (illuminated), and press the POSITIVE indicator switch to the off position (not illuminated). |
| 806. Press the CHANNEL button. | 825. Set the INCREMENTS INHIBIT switch to the OFF position. |
| 807. Press the EXECUTE button. | 826. Set the INHIBIT INTERRUPT switch to the OFF position. |
| 808. Verify that the OINC indicator is on. | 827. Set the T12 COUNTER STOP switch to the OFF position. |
| 809. Verify that BIT 11 of the REG SEL display is a "0". Stamp data sheet. | 828. Press the RESET button on the FREQUENCY COUNTER. |
| 810. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position. | 829. Press the PROCEED button. |
| 811. Press Keys CL, 00014, 02000. | 830. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet. |
| 812. Verify that the REG SEL display is 0000 010 000 000 000. | 831. Set the T12 COUNTER STOP switch to the ON position. |
| 813. Verify that the REG SEL display is 0000 010 000 000 000. | 832. Set the INCREMENTS INHIBIT switch to the ON position. |
| 814. Press the CHANNEL button. | 833. Set the INHIBIT INTERRUPT switch to the ON position. |
| 815. Press the EXECUTE button. | 834. Press the READ AGC indicator switch to the on (illuminated) position. |
| 816. Verify that the LINC indicator is on. | 835. Press Keys CL, 0014. |
| 817. Press Keys CL, 00054, 75777. | |
| 818. Verify that the RZ display is 0000 000 000 101 100. | |
| 819. Verify that the REG SEL display is 0111 101 111 111 111. | |

DATE 18 JAN 68

SUBSYSTEM Computer

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| 836. Verify that the RZ display is 0000 000 000 001 100. | 854. Press the EXECUTE button. |
| 837. Press the CHANNEL button. | 855. Set the CHANNEL S switches to the 20c position. |
| 838. Press the EXECUTE button. | 856. Press the MONITOR indicator switch to the on (illuminated) position. |
| 839. Verify that the OINC indicator is on. | 857. Set the INCREMENTS INHIBIT switch to the OFF position. |
| 840. Verify that BIT 11 of the REG SEL display is a "0". Stamp data sheet. | 858. Set the INHIBIT INTERRUPT switch to the OFF position. |
| 841. Set the CHANNEL T switches to position 101. | 859. Set the T12 COUNTER STOP switch to the OFF position. |
| 842. Set the FREQ + PHASE switch to the FRS S → T position. | 860. Press the RESET button on the FREQUENCY COUNTER. |
| <u>CDU-X</u> | 861. Press the PROCEED button. |
| 843. Set the AGC INPUT COUNTERS switch to position 9. | 862. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet. |
| 844. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position. | 863. Set the T12 COUNTER STOP switch to the ON position. |
| 845. Press Keys CL, 00014, 40000. | 864. Set the INCREMENTS INHIBIT switch to the ON position. |
| 846. Verify that the RZ display is 0000 000 000 001 100. | 865. Set the INHIBIT INTERRUPT switch to the ON position. |
| 847. Verify that the REG SEL display is 0100 000 000 000 000. | 866. Press the READ AGC indicator switch to the on (illuminated) position. |
| 848. Press the CHANNEL button. | 867. Press Keys CL, 0014. |
| 849. Press the EXECUTE button. | 868. Verify that the RZ display is 0000 000 000 001 100. |
| 850. Verify that the LINC indicator is on. | 869. Press the CHANNEL button. |
| 851. Press Keys CL, 00050, 75777. | 870. Press the EXECUTE button. |
| 852. Verify that the RZ display is 0000 000 000 101 000. | |
| 853. Verify that the REG SEL display is 0111 101 111 111 111. | |

DATE 19 JAN 68

SUBSYSTEM Computer:

871. Verify that the OINC indicator is on.
872. Verify that BIT 15 of the REG SEL display is a "0". Stamp data sheet.
- CDU-Y**
873. Set the AGC INPUT COUNTERS switch to position 4.
874. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
875. Press Keys CL, 00014, 20000.
876. Verify that the RZ display is 0000 000 000 001 100.
877. Verify that the REG SEL display is 0110 000 000 000 000.
878. Press the CHANNEL button.
879. Press the EXECUTE button.
880. Verify that the LINC indicator is on.
881. Press Keys CL, 00051, 75777.
882. Verify that the RZ display is 0000 000 000 101 001.
883. Verify that the REG SEL display is 0111 101 111 111 111.
884. Press the EXECUTE button.
885. Set the CHANNEL S switches to the 204 position.
886. Press the MONITOR indicator switch to the on (illuminated) position.
887. Set the INCREMENTS INHIBIT switch to the OFF position.
888. Set the INHIBIT INTERRUPT switch to the OFF position.
889. Set the T12 COUNTER STOP switch to the OFF position.
890. Press the RESET button on the FREQUENCY COUNTER.
891. Press the PROCEED button.
892. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.
893. Set the T12 COUNTER STOP switch to the ON position.
894. Set the INCREMENTS INHIBIT switch to the ON position.
895. Set the INHIBIT INTERRUPT switch to the ON position.
896. Press the READ AGC indicator switch to the on (illuminated) position.
897. Press Keys CL, 0014.
898. Verify that the RZ display is 0000 000 000 001 100.
899. Press the CHANNEL button.
900. Press the EXECUTE button.
901. Verify that the OINC indicator is on.
902. Verify that BIT 1 of the REG SEL display is a "0". Stamp data sheet.

DATE 18 JAN 68

SUBSYSTEM Computer

904. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
905. Press Keys CL, 00014, 10000.
906. Verify that the RZ display is 0000 000 000 001 100.
907. Verify that the REG SEL display is 0001 000 000 000 000.
908. Press the CHANNEL button.
909. Press the EXECUTE button.
910. Verify that the LINC indicator is on.
911. Press Keys CL, 00052, 75777.
912. Verify that the RZ display is 0000 000 000 101 010.
913. Verify that the REG SEL display is 0111 101 111 111 111.
914. Press the EXECUTE button.
915. Set the CHANNEL S switches to the 206 position.
916. Press the MONITOR indicator switch to the on (illuminated) position.
917. Set the INCREMENTS INHIBIT switch to the OFF position.
918. Set the INHIBIT IN/ERRRUT switch to the OFF position.
919. Set the T12 COUNTER STOP switch to the OFF position.
920. Press the RESET button on the FREQUENCY COUNTER.
921. Press the PROCEED button.
922. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.
923. Set the T12 COUNTER STOP switch to the ON position.
924. Set the INCREMENTS INHIBIT switch to the CN position.
925. Set the INHIBIT INTFRUPRT switch to the ON position.
926. Press the READ AGC indicator switch to the on (illuminated) position.
927. Press Keys CL, 0014.
928. Verify that the RZ display is 0000 000 000 001 100.
929. Press the CHANNEL button.
930. Press the EXECUTE button.
931. Verify that the QINC indicator is on.
932. Verify that BIT 13 of the REG SEL display is a "0". Stamp data sheet.

DATE 18 JAN 68

MAJOR GROUND SUPPORT EQUIPMENT

NAME _____	SER. NO. _____	CAL. DATE _____
NAME _____	SER. NO. _____	CAL. DATE _____
CONDUCTED BY _____		APPROVED BY _____
NAME/AFFILIATION _____		NAME/AFFILIATION _____

Step	Parameter	Specification	Results
20.	RG Indication	0011 111 111 111 111	_____
22.	RG Indication	1100 000 000 000 000	_____
24.	RG Indication	1100 000 000 000 001	_____
28.	RG Indication	1100 000 000 000 000	_____
49.	RG Indication	0011 111 111 111 110	_____
55.	RG Indication	0011 111 111 111 110	_____
63.	RG Indication	0011 111 111 111 100	_____
69.	RG Indication	0011 111 111 111 111	_____
91.	RG Indication	0011 111 111 111 111	_____
93.	RG Indication	1100 000 000 000 000	_____
95.	RG Indication	1100 000 000 000 001	_____
99.	RG Indication	1100 000 000 000 000	_____
120.	RG Indication	0011 111 111 111 110	_____
126.	RG Indication	0011 111 111 111 110	_____
134.	RG Indication	0011 111 111 111 100	_____

DATE 18 JAN 68

162.	RG Indication	0011 111 111 111 111	_____
164.	RG Indication	1100 000 000 000 000	_____
166.	RG Indication	1100 000 000 000 001	_____
170.	RG Indication	1100 000 000 000 000	_____
191.	RG Indication	0011 111 111 111 110	_____
197.	RG Indication	0011 111 111 111 110	_____
205.	RG Indication	0011 111 111 111 100	_____
211.	RG Indication	0011 111 111 111 111	_____
233.	RG Indication	0011 111 111 111 111	_____
235.	RG Indication	1100 000 000 000 000	_____
237.	RG Indication	1100 000 000 000 001	_____
241.	RG Indication	1100 000 000 000 000	_____
262.	RG Indication	0011 111 111 111 110	_____
268.	RG Indication	0011 111 111 111 110	_____
276.	RG Indication	0011 111 111 111 100	_____
282.	RG Indication	0011 111 111 111 111	_____
304.	RG Indication	0011 111 111 111 111	_____
306.	RG Indication	1100 000 000 000 000	_____
309.	RG Indication	1100 000 000 000 001	_____
312.	RG Indication	1100 000 000 000 000	_____
333.	RG Indication	0011 111 111 111 110	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 3 OF 5

JDC
NO. 05788
REV. C

JOB CDU COUNTERS TEST

Step	Parameter	Specification	Results
339.	RG Indication	0011 111 111 111 110	_____
347.	RG Indication	0011 111 111 111 100	_____
353.	RG Indication	0011 111 111 111 111	_____
373.	REG SEL Indication	1111 111 111 111 111	_____
385.	REG SEL Indication	1101 010 101 010 101	_____
397.	REG SEL Indication	0000 000 000 000 000	_____
416.	FREQUENCY COUNTER Display	1024	_____
426.	REG SEL Indication	BIT 16 is a "0"	_____
445.	FREQUENCY COUNTER Display	1024	_____
455.	REG SEL Indication	BIT 16 is a "0"	_____
467.	REG SEL Indication	1111 111 111 111 111	_____
479.	REG SEL Indication	1101 010 101 010 101	_____
491.	REG SEL Indication	0000 000 000 000 000	_____
510.	FREQUENCY COUNTER Display	1024	_____
520.	REG SEL Indication	BIT 14 is a "0"	_____
539.	FREQUENCY COUNTER Display	1024	_____
549.	REG SEL Indication	BIT 14 is a "0"	_____
561.	REG SEL Indication	1111 111 111 111 111	_____
573.	REG SEL Indication	1101 010 101 010 101	_____
585.	REG SEL Indication	0000 000 000 000 000	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 4 OF 5

JDC
NO. 05788
REV. C

JOB CDU COUNTERS TEST

Step	Parameter	Specification	Results
604.	FREQUENCY COUNTER Display	1024	_____
614.	REG SEL Indication	BIT 13 is a "0"	_____
623.	FREQUENCY COUNTER Display	1024	_____
643.	REG SEL Indication	BIT 13 is a "0"	_____
657.	REG SEL Indication	1111 111 111 111 111	_____
669.	REG SEL Indication	1101 010 101 010 101	_____
681.	REG SEL Indication	0000 000 000 000 000	_____
702.	FREQUENCY COUNTER Display	1024	_____
712.	REG SEL Indication	BIT 12 is a "0"	_____
732.	FREQUENCY COUNTER Display	1024	_____
742.	REG SEL Indication	BIT 12 is a "0"	_____
754.	REG SEL Indication	1111 111 111 111 111	_____
766.	REG SEL Indication	1101 010 101 010 101	_____
778.	REG SEL Indication	0000 000 000 000 000	_____
799.	FREQUENCY COUNTER Display	1024	_____
809.	REG SEL Indication	BIT 11 is a "0"	_____
830.	FREQUENCY COUNTER Display	1024	_____
840.	REG SEL Indication	BIT 11 is a "0"	_____

DATE 18 JAN 68

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 5 OF 5

JDC
NO. <u>05788</u>
REV. <u>C</u>

JOB CDU COUNTERS TEST

<u>Step</u>	<u>Parameter</u>	<u>Specification</u>	<u>Results</u>
862.	FREQUENCY COUNTER Display	1024	_____
872.	REG SEL Indication	BIT 15 is a "0"	_____
892.	FREQUENCY COUNTER Display	1024	_____
902.	REG SEL Indication	BIT 14 is a "0"	_____
922.	FREQUENCY COUNTER Display	1024	_____
932.	REG SEL Indication	BIT 13 is a "0"	_____

DATE 18 JAN 68

SUBSYSTEM Computer ASSY. Block II C-Computer

DESCRIPTION Tests the operation of the PIPA counters under normal and marginal input conditions.

Rev. Let.	Date	TDRR NO.	PAGES REVISED JDC D.S.	APPROVAL NIT NASA	REFERENCES
					JDC's 05413, 05414, ND-1021042, and ND-1021043
					IMPORTANT
					INTERVAL As required
					TOOLS AND MATERIAL

PREPARATION

1. Verify that the Programmer and Monitor and Logic Drawer No. 2 Panels are set-up as specified in JDC 05413.

2. Verify that the XY and RDC Interface Panels are set up as specified in JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel and the XY Interface panel of the CTS.

PIPA X TEST

3. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

4. Press Keys CL, 00014, 00040.

5. Verify that the RZ display is 0000 000 000 001 100.

6. Verify that the REG SEL display is 0000 000 000 100 000.

7. Press the CHANNEL button.

8. Press the EXECUTE button.

9. Verify that the LINC indicator is on.

10. Verify that the RG display is 0000 000 000 100 000.

11. Press Keys CL, 00037, 37774.

12. Verify that the RZ display is 0000 000 000 011 111.

13. Verify that the REG SEL display is 0011 111 111 111 100.

VERIFICATION, WITH SIDL REQUIRED BEFORE USE

DATE

SUBSYSTEM Computer ASSY. Block II C-Computer

14. Press the EXECUTE button.
15. Verify that the RG display is 0011 111 111 111 100.
16. Set the AGREEMENT A switches to XXXX 0037.
17. Set the Agreement A switch to the SAMPLE position.
18. Press the MONITOR indicator switch to the on (illuminated) position.
19. Set the T12 COUNTER STOP switch to the OFF position.
20. Set the INCREMENTS INHIBIT switch to the OFF position.
21. Set the AGC INPUT COUNTERS switch to position 20.
22. Press the POSITIVE indicator switch to the on (illuminated) position.
23. Press the B II PIPA indicator switch to the on (illuminated) position.
24. Press the SINGLE PULSE indicator switch to the on (illuminated) position.
25. Press the PROCEED button.
26. Press the SINGLE PULSE button 3 to 7 times until the RG display is 0011 111 111 111 111.
27. Press the SINGLE PULSE button.
28. Verify that the RG display is 0100 000 000 000 000. Stamp data sheet.
29. Press the SINGLE PULSE button.
30. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.

31. Press the POSITIVE indicator switch to the off (extinguished) position.
32. Press the NEGATIVE indicator switch to the on (illuminated) position.
33. Press the SINGLE PULSE button three times.
34. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.
35. Press the SINGLE PULSE button.
36. Verify that the RG display is 1111 111 111 111 111.
37. Press the SINGLE PULSE button.
38. Verify that the RG display is 1111 111 111 111 110. Stamp data sheet.
39. Press the NEGATIVE indicator switch to the off (extinguished) position.
40. Press the POSITIVE indicator switch to the on (illuminated) position.
41. Press the SINGLE PULSE button three times.
42. Verify that the RG display is 1111 111 111 111 110. Stamp data sheet.
43. Press the SINGLE PULSE button.
44. Verify that the RG display is 1111 111 111 111 111. Stamp data sheet.
45. Set the T12 COUNTER STOP switch to the ON position.

Input Margins Check

46. Set the Y MARGINS switch to the VZ (High Zero) position.

DATE

SUBSYSTEM Computer ASSY. Block II C-Computer

47. Set the T12 COUNTER STOP switch to the OFF position.
48. Press the PROCEED button.
49. Press the SINGLE PULSE button 7 times.
50. Verify that the RG display is 1111 111 111 111 111. Stamp data sheet.
51. Press the POSITIVE indicator switch to the off (extinguished) position.
52. Press the NEGATIVE indicator switch to the on (illuminated) position.
53. Press the SINGLE PULSE button 7 times.
54. Verify that the RG display is 1111 111 111 111 111. Stamp data sheet.
55. Set the T12 COUNTER STOP switch to the ON position.
56. Set the Y MARGINS switch to the V3 (Low One) position.
57. Set the T12 COUNTER STOP switch to the OFF position.
58. Press the PROCEED button.
59. Press the SINGLE PULSE button 3 to 7 times until the RG display is 1111 111 111 111 110.
60. Press the SINGLE PULSE button.
61. Verify that the RG display is 1111 111 111 111 101. Stamp data sheet.
62. Press the NEGATIVE indicator switch to the off (extinguished) position.

63. Press the POSITIVE indicator switch to the on (illuminated) position.
64. Press the SINGLE PULSE button three times.
65. Verify that the RG display is 1111 111 111 111 101.
66. Press the SINGLE PULSE button.
67. Verify that the RG display is 1111 111 111 111 110.
68. Press the SINGLE PULSE button.
69. Verify that the RG display is 1111 111 111 111 111. Stamp data sheet.
70. Set the T12 COUNTER STOP switch to the ON position.
71. Set the INCREMENTS INHIBIT switch to the ON position.
72. Set the Agreement A switch to the OFF position.
73. Set the Y MARGINS switch to the NORM position.

PIPA Y TEST

74. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
75. Press Keys CL, 00014, 00040.
76. Verify that the RZ display is 0000 000 000 001 100.
77. Verify that the REG SEL display is 0000 000 000 100 000.

DATE

SUBSYSTEM Computer ASSY. Block II C-Computer

78. Press the CHANNEL button.
79. Press the EXECUTE button.
80. Verify that the LINC indicator is on.
81. Verify that the RG display is 0000 000 000 100 000.
82. Press Keys CL, 00040, 37774.
83. Verify that the RZ display is 0000 000 000 100 000.
84. Verify that the REG SEL display is 0011 111 111 111 100.
85. Press the EXECUTE button.
86. Verify that the RG display is 0011 111 111 111 100.
87. Set the AGREEMENT A switches to XXXX 0040.
88. Set the Agreement A switch to the SAMPLE position.
89. Press the MONITOR indicator switch to the on (illuminated) position.
90. Set the T12 COUNTER STOP switch to the OFF position.
91. Set the INCREMENTS INHIBIT switch to the OFF position.
92. Set the AGC INPUT COUNTERS switch to position 19.
93. Press the POSITIVE indicator switch to the on (illuminated) position.
94. Press the B II PIPA indicator switch to the on (illuminated) position.

95. Press the SINGLE PULSE indicator switch to the on (illuminated) position.
96. Press the PROCEED button.
97. Press the SINGLE PULSE button 3 to 7 times until the RG display is 0011 111 111 111 111.
98. Press the SINGLE PULSE button.
99. Verify that the RG display is 0100 000 000 000 000. Stamp data sheet.
100. Press the SINGLE PULSE button.
101. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.
102. Press the POSITIVE indicator switch to the off (extinguished) position.
103. Press the NEGATIVE indicator switch to the on (illuminated) position.
104. Press the SINGLE PULSE button three times.
105. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.
106. Press the SINGLE PULSE button.
107. Verify that the RG display is 1111 111 111 111 111.
108. Press the SINGLE PULSE button.
109. Verify that the RG display is 1111 111 111 111 110. Stamp data sheet.
110. Press the NEGATIVE indicator switch to the off (extinguished) position.
111. Press the POSITIVE indicator switch to the on (illuminated) position.

DATE

SUBSYSTEM Computer ASSY Block II C-Computer

112. Press the SINGLE PULSE button three times.
113. Verify that the RG display is 1111 111 111 110. Stamp data sheet.
114. Press the SINGLE PULSE button.
115. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
116. Set the T12 COUNTER STOP switch to the ON position.
- Input Margins Check
117. Set the Y MARGINS switch to the V2 (High Zero) position.
118. Set the T12 COUNTER STOP switch to the OFF position.
119. Press the PROCEED button.
120. Press the SINGLE PULSE button 7 times.
121. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
122. Press the POSITIVE indicator switch to the off (extinguished) position.
123. Press the NEGATIVE indicator switch to the on (illuminated) position.
124. Press the SINGLE PULSE button 7 times.
125. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
126. Set the T12 COUNTER STOP switch to the ON position.
127. Set the Y MARGINS switch to the V3 (Low One) position.

128. Set the T12 COUNTER STOP switch to the OFF position.
129. Press the PROCEED button.
130. Press the SINGLE PULSE button 7 times until the RG display is 1111 111 111 110.
131. Press the SINGLE PULSE button.
132. Verify that the RG display is 1111 111 111 101. Stamp data sheet.
133. Press the NEGATIVE indicator switch to the off (extinguished) position.
134. Press the POSITIVE indicator switch to the on (illuminated) position.
135. Press the SINGLE PULSE button three times.
136. Verify that the RG display is 1111 111 111 101.
137. Press the SINGLE PULSE button.
138. Verify that the RG display is 1111 111 111 110.
139. Press the SINGLE PULSE button.
140. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
141. Set the T12 COUNTER STOP switch to the ON position.
142. Set the INCREMENTS INHIBIT switch to the ON position.
143. Set the Agreement A switch to the OFF position.
144. Set the Y MARGINS switch to the NORM position.

DATE _____

SUBSYSTEM Computer ASSY Block II C-Computer

- PIPA Z TEST
145. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
146. Press Keys CL, 00014, 00040.
147. Verify that the RZ display is 0000 000 000 001 100.
148. Verify that the REG SEL display is 0000 000 000 100 000.
149. Press the CHANNEL button.
150. Press the EXECUTE button.
151. Verify that the LINC indicator is on.
152. Verify that the RG display is 0000 000 000 100 000.
153. Press Keys CL, 00041, 37774.
154. Verify that the RZ display is 0000 000 000 100 001.
155. Verify that the REG SEL display is 0011 111 111 111 100.
156. Press the EXECUTE button.
157. Verify that the RG display is 0011 111 111 111 100.
158. Set the AGREEMENT A switches to XXXX 0041.
159. Set the Agreement A switch to the SAMPLE position.
160. Press the MONITOR indicator switch to the on (illuminated) position.
161. Set the T12 COUNTER STOP switch to the OFF position.

162. Set the INCREMENTS INHIBIT switch to the OFF position.
163. Set the AGC INPUT COUNTERS switch to position 18.
164. Press the POSITIVE indicator switch to the on (illuminated) position.
165. Press the B II PIPA indicator switch to the on (illuminated) position.
166. Press the SINGLE PULSE indicator switch to the on (illuminated) position.
167. Press the PROCEED button.
168. Press the SINGLE PULSE button 3 to 7 times until the RG display is 0011 111 111 111 111.
169. Press the SINGLE PULSE button.
170. Verify that the RG display is 0130 000 000 000 000. Stamp data sheet.
171. Press the SINGLE PULSE button.
172. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.
173. Press the POSITIVE indicator switch to the off (extinguished) position.
174. Press the NEGATIVE indicator switch to the on (illuminated) position.
175. Press the SINGLE PULSE button three times.
176. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.
177. Press the SINGLE PULSE button.
178. Verify that the RG display is 1111 111 111 111 111.

DATE _____

SUBSYSTEM Computer ASSY Block II C-Computer

179. Press the SINGLE PULSE button.
180. Verify that the RG display is 1111 111 111 110. Stamp data sheet.
181. Press the NEGATIVE indicator switch to the off (extinguished) position.
182. Press the POSITIVE indicator switch to the on (illuminated) position.
183. Press the SINGLE PULSE button three times.
184. Verify that the RG display is 1111 111 111 110. Stamp data sheet.
185. Press the SINGLE PULSE button.
186. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
187. Set the T12 COUNTER STOP switch to the ON position.
- Input Margins Check
188. Set the Y MARGINS switch to the V2 (High Zero) position.
189. Set the T12 COUNTER STOP switch to the OFF position.
190. Press the PROCEED button.
191. Press the SINGLE PULSE button 7 times.
192. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
193. Press the POSITIVE indicator switch to the off (extinguished) position.
194. Press the NEGATIVE indicator switch to the on (illuminated) position.

195. Press the SINGLE PULSE button 7 times.
196. Verify that the RG display is 1111 111 111 111. Stamp data sheet.
197. Set the T12 COUNTER STOP switch to the ON position.
198. Set the Y MARGINS switch to the V3 (Low One) position.
199. Set the T12 COUNTER STOP switch to the OFF position.
200. Press the PROCEED button.
201. Press the SINGLE PULSE button 3 to 7 times until the RG display is 1111 111 111 110.
202. Press the SINGLE PULSE button.
203. Verify that the RG display is 1111 111 111 101. Stamp data sheet.
204. Press the NEGATIVE indicator switch to the off (extinguished) position.
205. Press the POSITIVE indicator switch to the on (illuminated) position.
206. Press the SINGLE PULSE button three times.
207. Verify that the RG display is 1111 111 111 101.
208. Press the SINGLE PULSE button.
209. Verify that the RG display is 1111 111 111 110.
210. Press the SINGLE PULSE button.
211. Verify that the RG display is 1111 111 111 111. Stamp data sheet.

DATE _____

SUBSYSTEM Computer ASSY Block II C-Computer

212. Set the T12 COUNTER STOP switch to the ON position.
213. Set the INCREMENTS INHIBIT switch to the ON position.

214. Set the Agreement A switch to the OFF position.
215. Set the Y MARGINS switch to the NORM position.

DATE _____

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 1 OF 2

JDC
NO. 05789
REV. _____
INITIAL TDRR 35464

JOB PIPA COUNTERS TEST

ASSEMBLY UNDER TEST		TEST HISTORY		
TITLE _____		DATE	START	END
SER. NO. _____	DWG _____	REV. _____	TIME	SITE / LOCATION
			START	END
MAJOR GROUND SUPPORT EQUIPMENT			TOTAL ELAPSED	
NAME _____	SER. NO. _____	CAL DATE _____		
NAME _____	SER. NO. _____	CAL DATE _____		
CONDUCTED BY _____		APPROVED BY _____		
NAME / AFFILIATION _____		NAME / AFFILIATION _____		

Step	Parameter	Specification	Results
28.	RG Indication	0100 000 000 000 000	_____
30.	RG Indication	0000 000 000 000 001	_____
34.	RG Indication	0000 000 000 000 001	_____
38.	RG Indication	1111 111 111 111 110	_____
42.	RG Indication	1111 111 111 111 110	_____
44.	RG Indication	1111 111 111 111 111	_____
50.	RG Indication	1111 111 111 111 111	_____
54.	RG Indication	1111 111 111 111 111	_____
61.	RG Indication	1111 111 111 111 101	_____
69.	RG Indication	1111 111 111 111 111	_____
99.	RG Indication	0100 000 000 000 000	_____
101.	RG Indication	0000 000 000 000 001	_____
105.	RG Indication	0000 000 000 000 001	_____
109.	RG Indication	1111 111 111 111 110	_____
113.	RG Indication	1111 111 111 111 110	_____

DATE _____

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 2 OF 2

JDC
NO. 05789
REV. _____

JOB PIPA COUNTERS TEST

Step	Parameter	Specification	Results
115.	RG Indication	1111 111 111 111 111	_____
121.	RG Indication	1111 111 111 111 111	_____
125.	RG Indication	1111 111 111 111 111	_____
132.	RG Indication	1111 111 111 111 101	_____
140.	RG Indication	1111 111 111 111 111	_____
170.	RG Indication	0100 000 000 000 000	_____
172.	RG Indication	0000 000 000 000 001	_____
176.	RG Indication	0000 000 000 000 001	_____
180.	RG Indication	1111 111 111 111 110	_____
184.	RG Indication	1111 111 111 111 110	_____
186.	RG Indication	1111 111 111 111 111	_____
192.	RG Indication	1111 111 111 111 111	_____
196.	RG Indication	1111 111 111 111 111	_____
203.	RG Indication	1111 111 111 111 101	_____
211.	RG Indication	1111 111 111 111 111	_____

DATE _____

Tests the operation of the Gyro Counters under normal and marginal input conditions.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MIT	NASA	
							JDC's 05402, 05413, 05414, ND-1021042, and ND-1021043
							IMPORTANT
							INTERVAL As required
							TOOLS AND MATERIAL

PREPARATION

1. Verify that the Programmer and Monitor and Logic Drawer No. 2 Panels are set-up as specified in JDC 05413.

2. Verify that the XY and RDC Interface Panels are set up as specified in JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor Panel, the Logic Drawer No. 2 panel and the XY Interface panel of the CTS.

BMAG X TEST

3. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

4. Press Keys CL, 00013, 00200.

5. Verify that the RZ display is 0000 000 000 001.

6. Verify that the REG SEL display is 0000 000 010 000 000.

7. Press the CHANNEL button.

8. Press the EXECUTE button.

9. Verify that the RG display is 0000 000 010 000 000.

10. Verify that the LINC indicator is on.

11. Press Keys CL, 00042, 37776.

12. Verify that the RZ display is 0000 003 000 100 010.

VERIFICATION WITH SIOL REQUIRED BEFORE USE DATE _____

13. Verify that the REG SEL display is 0011 111 111 111 110.

14. Press the EXECUTE button.

15. Verify that the RG display is 0011 111 111 111 110.

16. Verify that the LINC indicator is on.

17. Set the AGREEMENT A switches to XXXX 0042.

18. Press the MONITOR indicator switch to the on (illuminated) position.

19. Set the T12 COUNTER STOP switch to the OFF position.

20. Set the INCREMENTS INHIBIT switch to the OFF position.

21. Set the AGC INPUT COUNTERS switch to position 6.

22. Press the POSITIVE indicator switch to the on (illuminated) position.

23. Press the SINGLE PULSE indicator switch to the on (illuminated) position.

24. Set the Agreement A switch to SAMPLE.

25. Press the PROCEED button.

26. Press the SINGLE PULSE button.

27. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.

28. Press the SINGLE PULSE button.

29. Verify that the RG display is 0100 000 000 000 000. Stamp data sheet.

30. Press the SINGLE PULSE button.

31. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.

32. Press the POSITIVE indicator switch to the off (extinguished) position.

33. Press the NEGATIVE indicator switch to the on (illuminated) position.

34. Press the SINGLE PULSE button.

35. Verify that the RG display is 1111 111 111 111 111. Stamp data sheet.

36. Press the SINGLE PULSE button twice.

37. Verify that the RG display is 1111 111 111 111 101. Stamp data sheet.

38. Set the T12 COUNTER STOP switch to the ON position.

39. Set the INCREMENTS INHIBIT switch to the ON position and the Agreement A switch to the OFF position.

Input Margins

40. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

41. Press Keys CL, 00042, 37776.

42. Verify that the RZ display is 0000 000 000 100 010.

43. Verify that the REG SEL display is 0011 111 111 111 110.

44. Press the EXECUTE button.

45. Verify that the RZ display is 0011 111 111 111 110.

46. Verify that the LINC indicator is on.

DATE _____

47. Set the Y MARGINS switch to the V2 (High Zero) position.

48. Press the MONITOR indicator switch to the on (illuminated) position.

49. Press the NEGATIVE indicator switch to the off (extinguished) position.

50. Press the POSITIVE indicator switch to the on (illuminated) position.

51. Set the T12 COUNTER STOP switch to the OFF position.

52. Set the INCREMENTS INHIBIT switch to the OFF position and the Agreement A switch to SAMPLE.

53. Press the PROCEED button.

54. Press the SINGLE PULSE button.

55. Verify that the RG display is 0011 111 111 111 110.

56. Press the SINGLE PULSE button.

57. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.

58. Press the POSITIVE indicator switch to the off (extinguished) position.

59. Press the NEGATIVE indicator switch to the on (illuminated) position.

60. Press the SINGLE PULSE button.

61. Verify that the RG display is 0011 111 111 111 110.

62. Press the SINGLE PULSE button twice.

63. Verify that the RG display is 0011 111 111 111 110. Stamp data sheet.

64. Set the T12 COUNTER STOP switch to the ON position.

65. Set the Y MARGINS switch to the V3 (Low One) position.

66. Set the T12 COUNTER STOP switch to the OFF position.

67. Press the PROCEED button.

68. Press the SINGLE PULSE button.

69. Verify that the RG display is 0011 111 111 111 101.

70. Press the SINGLE PULSE button.

71. Verify that the RG display is 0011 111 111 111 100. Stamp data sheet.

72. Press the NEGATIVE indicator switch to the off (extinguished) position.

73. Press the POSITIVE indicator switch to the on (illuminated) position.

74. Press the SINGLE PULSE button.

75. Verify that the RG display is 0011 111 111 111 101.

76. Press the SINGLE PULSE button twice.

77. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.

78. Set the T12 COUNTER STOP switch to the ON position.

79. Set the INCREMENTS INHIBIT switch to the ON position.

80. Set the Agreement A switch to the OFF position.

DATE _____

81. Set the Y MARGINS switch to the NORM position.

BMAG Y TEST

82. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

83. Press Keys CL, 00013, 00200.

84. Verify that the RZ display is 0000 000 000 001 011.

85. Verify that the REG SEL display is 0000 000 010 000 000.

86. Press the CHANNEL button.

87. Press the EXECUTE button.

88. Verify that the RG display is 0000 000 010 000 000.

89. Verify that the LINC indicator is on.

90. Press Keys CL, 00043, 37776.

91. Verify that the RZ display is 0000 000 000 100 011.

92. Verify that the REG SEL display is 0011 111 111 111 110.

93. Press the EXECUTE button.

94. Verify that the RG display is 0011 111 111 111 110.

95. Verify that the LINC indicator is on.

96. Set the AGREEMENT A switches to XXXX 0043.

97. Press the MONITOR indicator switch to the on (illuminated) position.

98. Set the T12 COUNTER STOP switch to the OFF position.

99. Set the INCREMENTS INHIBIT switch to the OFF position.

100. Set the AGC INPUT COUNTERS switch to position 7.

101. Press the POSITIVE indicator switch to the on (illuminated) position.

102. Press the SINGLE PULSE indicator switch to the on (illuminated) position.

103. Set the Agreement A switch to SAMPLE.

104. Press the PROCEED button.

105. Press the SINGLE PULSE button.

106. Verify that the RG display is 0011 111 111 111 111. Stamp data sheet.

107. Press the SINGLE PULSE button.

108. Verify that the RG display is 0100 000 000 000 000. Stamp data sheet.

109. Press the SINGLE PULSE button.

110. Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.

111. Press the POSITIVE indicator switch to the off (extinguished) position.

112. Press the NEGATIVE indicator switch to the on (illuminated) position.

113. Press the SINGLE PULSE button.

114. Verify that the RG display is 1111 111 111 111 111. Stamp data sheet.

DATE _____

JOB	GYRO COUNTERS TEST	JDC 05790 REV	PAGE 5 OF 10
SUBSYSTEM	Computer	ASSY	Block II C-Computer
115.	Press the SINGLE PULSE button twice.	131.	Set the INCREMENTS INHIBIT switch to the OFF position and the Agreement A switch to SAMPLE.
116.	Verify that the RG display is 1111 111 111 101. Stamp data sheet.	132.	Press the PROCEED button.
117.	Set the T12 COUNTER STOP switch to the ON position.	133.	Press the SINGLE PULSE button.
118.	Set the INCREMENTS INHIBIT switch to the ON position and the Agreement A switch to the OFF position.	134.	Verify that the RG display is 0011 111 111 110.
<u>Input Margins</u>		135.	Press the SINGLE PULSE button.
119.	Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	136.	Verify that the RG display is 0011 111 111 110. Stamp data sheet.
120.	Press Keys CL, 00043, 37776.	137.	Press the POSITIVE indicator switch to the off (extinguished) position.
121.	Verify that the RZ display is 0000 000 000 100 011	138.	Press the NEGATIVE indicator switch to the on (illuminated) position.
122.	Verify that the REG SEL display is 0011 111 111 110.	139.	Press the SINGLE PULSE button.
123.	Press the EXECUTE button.	140.	Verify that the RG display is 0011 111 111 110.
124.	Verify that the RG display is 0011 111 111 110.	141.	Press the SINGLE PULSE button twice.
125.	Verify that the LINC indicator is on.	142.	Verify that the RG display is 0011 111 111 110. Stamp data sheet.
126.	Set the Y MARGINS switch to the V2 (High Zero) position.	143.	Set the T12 COUNTER STOP switch to the ON position.
127.	Press the MONITOR indicator switch to the on (illuminated) position.	144.	Set the Y MARGINS switch to the V3 (Low One) position.
128.	Press the NEGATIVE indicator switch to the off (extinguished) position.	145.	Set the T12 COUNTER STOP switch to the OFF position.
129.	Press the POSITIVE indicator switch to the on (illuminated) position.	146.	Press the PROCEED button.
130.	Set the T12 COUNTER STOP switch to the OFF position.	147.	Press the SINGLE PULSE button.

DATE _____

JOB	GYRO COUNTERS TEST	JDC 05790 REV	PAGE 6 OF 10
SUBSYSTEM	Computer	ASSY	Block II C-Computer
148.	Verify that the RG display is 0011 111 111 110.	164.	Verify that the REG SEL display is 0000 000 010 000 000.
149.	Press the SINGLE PULSE button.	165.	Press the CHANNEL button.
150.	Verify that the RZ display is 0011 111 111 100. Stamp data sheet.	166.	Press the EXECUTE button.
151.	Press the NEGATIVE indicator switch to the off (extinguished) position.	167.	Verify that the RG display is 0000 000 010 000 000.
152.	Press the POSITIVE indicator switch to the on (illuminated) position.	168.	Verify that the LINC indicator is on.
153.	Press the SINGLE PULSE button.	169.	Press Keys CL, 00044, 37776.
154.	Verify that the RG display is 0011 111 111 110.	170.	Verify that the RZ display is 0000 000 000 100 100.
155.	Press the SINGLE PULSE button twice.	171.	Verify that the REG SEL display is 0011 111 111 110.
156.	Verify that the RG display is 0011 111 111 111. Stamp data sheet.	172.	Press the EXECUTE button.
157.	Set the T12 COUNTER STOP switch to the ON position.	173.	Verify that the RG display is 0011 111 111 110.
158.	Set the INCREMENTS INHIBIT switch to the ON position.	174.	Verify that the LINC indicator is on.
159.	Set the Agreement A switch to the OFF position.	175.	Set the AGREEMENT A switches to XXXX 0044.
160.	Set the Y MARGINS switch to the NORM position.	176.	Press the MONITOR indicator switch to the on (illuminated) position.
<u>BMAG 2 TEST</u>		177.	Set the T12 COUNTER STOP switch to the OFF position.
161.	Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.	178.	Set the INCREMENTS INHIBIT switch to the OFF position.
162.	Press Keys CL, 00013, 00230.	179.	Set the AGC INPUT COUNTERS switch to position 8.
163.	Verify that the RZ display is 0000 000 000 001 011.	180.	Press the POSITIVE indicator switch to the on (illuminated) position.

DATE _____

JOB	GYRO COUNTERS TEST	JDC 05790 REV	PAGE 7 OF 10
SUBSYSTEM	Computer	ASSY	Block II C-Computer
181.	Press the SINGLE PULSE indicator switch to the on (illuminated) position.	<u>Input Margins</u>	
182.	Set the Agreement A switch to SAMPLE.	198.	Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
183.	Press the PROCEED button.	199.	Press Keys CL, 00044, 37776.
184.	Press the SINGLE PULSE button.	200.	Verify that the RZ display is 0000 000 000 100 100.
185.	Verify that the RG display is 0011 111 111 111. Stamp data sheet.	201.	Verify that the REG SEL display is 0011 111 111 110.
186.	Press the SINGLE PULSE button.	202.	Press the EXECUTE button.
187.	Verify that the RG display is 0100 000 000 000 000. Stamp data sheet.	203.	Verify that the RG display is 0011 111 111 110.
188.	Press the SINGLE PULSE button.	204.	Verify that the LINC indicator is on.
189.	Verify that the RG display is 0000 000 000 000 001. Stamp data sheet.	205.	Set the Y MARGINS switch to the V2 (High Zero) position.
190.	Press the POSITIVE indicator switch to the off (extinguished) position.	206.	Press the MONITOR indicator switch to the on (illuminated) position.
191.	Press the NEGATIVE indicator switch to the on (illuminated) position.	207.	Press the NEGATIVE indicator switch to the off (extinguished) position.
192.	Press the SINGLE PULSE button.	208.	Press the POSITIVE indicator switch to the on (illuminated) position.
193.	Verify that the RG display is 1111 111 111 111. Stamp data sheet.	209.	Set the T12 COUNTER STOP switch to the OFF position.
194.	Press the SINGLE PULSE button twice.	210.	Set the INCREMENTS INHIBIT switch to the OFF position and the Agreement A switch to SAMPLE.
195.	Verify that the RG display is 1111 111 111 101. Stamp data sheet.	211.	Press the PROCEED button.
196.	Set the T12 COUNTER STOP switch to the ON position.	212.	Press the SINGLE PULSE button.
197.	Set the INCREMENTS INHIBIT switch to the ON position and the Agreement A switch to the OFF position.	213.	Verify that the RG display is 0011 111 111 110.

DATE _____

JOB	GYRO COUNTERS TEST	JDC 05790 REV	PAGE 8 OF 10
SUBSYSTEM	Computer	ASSY	Block II C-Computer
214.	Press the SINGLE PULSE button.	231.	Press the POSITIVE indicator switch to the on (illuminated) position.
215.	Verify that the RG display is 0011 111 111 110. Stamp data sheet.	232.	Press the SINGLE PULSE button.
216.	Press the POSITIVE indicator switch to the off (extinguished) position.	233.	Verify that the RG display is 0011 111 111 110.
217.	Press the NEGATIVE indicator switch to the on (illuminated) position.	234.	Press the SINGLE PULSE button twice.
218.	Press the SINGLE PULSE button.	235.	Verify that the RG display is 0011 111 111 111. Stamp data sheet.
219.	Verify that the RG display is 0011 111 111 110.	236.	Set the T12 COUNTER STOP switch to the ON position.
220.	Press the SINGLE PULSE button twice.	237.	Set the INCREMENTS INHIBIT switch to the ON position.
221.	Verify that the RG display is 0011 111 111 110. Stamp data sheet.	238.	Set the Agreement A switch to the OFF position.
222.	Set the T12 COUNTER STOP switch to the ON position.	239.	Set the Y MARGINS switch to the NORM position.
223.	Set the Y MARGINS switch to the V3 (Low One) position.	<u>GYRO (X, Y, and Z) TEST</u>	
224.	Set the T12 COUNTER STOP switch to the OFF position.	240.	Verify that the STRT1/STRT2 switch on the Buffer Circuit Assembly is in the OFF position.
225.	Press the PROCEED button.	241.	Press the LOAD CHAN T 510 OHMS indicator switch to the on (illuminated) position.
226.	Press the SINGLE PULSE button.	242.	Set the FREQ + PHASE switch to the FRT T - S position.
227.	Verify that the RG display is 0011 111 111 101.	243.	Prepare the CTS FREQUENCY COUNTER for operation as specified on step 1 of JDC 05402.
228.	Press the SINGLE PULSE button.	NOTE: During this test the FREQUENCY COUNTER is to be operated as described under PROCEDURE in JDC 05402.	
229.	Verify that the RG display is 0011 111 111 100. Stamp data sheet.		
230.	Press the NEGATIVE indicator switch to the off (extinguished) position.		

DATE _____

244. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

245. Press Keys CL, 00047, 77777.

246. Verify that the RZ display is 0000 000 000 100 111.

247. Verify that the REG SEL display is 0111 111 111 111 111.

248. Press the EXECUTE button.

249. Verify that the LINC indicator is on.

250. Press the READ AGC indicator switch to the on (illuminated) position.

251. Press Keys CL, 0047.

252. Verify that the RZ display is 0000 000 000 100 111.

253. Press the EXECUTE button.

254. Verify that the OINC indicator is on.

255. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.

256. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

257. Press Keys CL, 00047, 52525.

258. Verify that the RZ display is 0000 000 000 100 111.

259. Verify that the REG SEL display is 0101 010 101 010 101.

260. Press the EXECUTE button.

261. Verify that the LINC indicator is on.

262. Press the READ AGC indicator switch to the on (illuminated) position.

263. Press Keys CL, 0047.

264. Verify that the RZ display is 0000 000 000 100 111.

265. Press the EXECUTE button.

266. Verify that the OINC indicator is on.

267. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.

268. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

269. Press Keys CL, 00047, 00000.

270. Verify that the RZ display is 0000 000 000 100 111.

271. Verify that the REG SEL display is 0000 000 000 000 000.

272. Press the EXECUTE button.

273. Verify that the LINC indicator is on.

274. Press the READ AGC indicator switch to the on (illuminated) position.

275. Press Keys CL, 0047.

276. Verify that the RZ display is 0000 000 000 100 111.

277. Press the EXECUTE button.

278. Verify that the OINC indicator is on.

279. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

280. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

281. Press Keys CL, 00014, 01000.

DATE

282. Verify that the RZ display is 0000 000 000 001 100.

283. Verify that the REG SEL display is 0000 001 000 000 000.

284. Press the CHANNEL button.

285. Press the EXECUTE button.

286. Verify that the LINC indicator is on.

287. Press Keys CL, 00047, 02000.

288. Verify that the RZ display is 0000 000 000 100 111.

289. Verify that the REG SEL display is 0000 010 000 000 000.

290. Press the EXECUTE button.

291. Verify that the LINC indicator is on.

292. Set the CHANNEL T switches to the 212 position.

293. Press the MONITOR indicator switch to the on (illuminated) position.

294. Set the INHIBIT INTERRUPT switch to the CFF position.

295. Set the INCREMENTS INHIBIT switch to the OFF position.

296. Set the T12 COUNTER STOP switch to the OFF position.

297. Press the RESET button on the FREQUENCY COUNTER.

298. Press the PROCEED button.

299. Verify that the FREQUENCY COUNTER display is 1024. Stamp data sheet.

300. Set the T12 COUNTER STOP switch to the ON position.

301. Set the INCREMENTS INHIBIT switch to the ON position.

302. Set the INHIBIT INTERRUPT switch to the ON position.

303. Press the READ AGC indicator switch to the on (illuminated) position.

304. Press Keys CL, 0014.

305. Verify that the RZ display is 0000 000 000 001 100.

306. Press the CHANNEL button.

307. Press the EXECUTE button.

308. Verify that the OINC indicator is on.

309. Verify that BIT 10 of the REG SEL display is a "0". Stamp data sheet.

DATE

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 1 OF 2

JOC
NO. 05790
REV. _____
INITIAL TORR 25464

JOB GYRO COUNTERS TEST

ASSEMBLY UNDER TEST		TEST HISTORY	
TITLE	DATE	START	END
SER. NO.	DWG.	REV.	SITE / LOCATION
MAJOR GROUND SUPPORT EQUIPMENT		TIME	TOTAL ELAPSED
NAME	SER. NO.	CAL DATE	
NAME	SER. NO.	CAL DATE	
CONDUCTED BY	NAME/AFFILIATION	APPROVED BY	NAME/AFFILIATION

Step	Parameter	Specification	Results
27.	RG Indication	0011 111 111 111 111	
29.	RG Indication	0100 000 000 000 000	
31.	RG Indication	0000 000 000 000 001	
35.	RG Indication	1111 111 111 111 111	
37.	RG Indication	1111 111 111 111 101	
57.	RG Indication	0011 111 111 111 110	
63.	RG Indication	0011 111 111 111 110	
71.	RG Indication	0011 111 111 111 100	
77.	RG Indication	0011 111 111 111 111	
106.	RG Indication	0011 111 111 111 111	
108.	RG Indication	0100 000 000 000 000	
110.	RG Indication	0000 000 000 000 001	
114.	RG Indication	1111 111 111 111 111	

DATE

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 2 OF 2

JOC
NO. 05790
REV. _____

JOB GYRO COUNTERS TEST

Step	Parameter	Specification	Results
116.	RG Indication	1111 111 111 111 101	
136.	RG Indication	0011 111 111 111 110	
142.	RG Indication	0011 111 111 111 110	
150.	RG Indication	0011 111 111 111 100	
166.	RG Indication	0011 111 111 111 111	
186.	RG Indication	0011 111 111 111 111	
187.	RG Indication	0100 000 000 000 000	
189.	RG Indication	0000 000 000 000 001	
193.	RG Indication	1111 111 111 111 111	
195.	RG Indication	1111 111 111 111 101	
216.	RG Indication	0011 111 111 111 110	
221.	RG Indication	0011 111 111 111 110	
229.	RG Indication	0011 111 111 111 100	
235.	RG Indication	0011 111 111 111 111	
255.	REG SEL Indication	1111 111 111 111 111	
267.	REG SEL Indication	1101 010 101 010 101	
279.	REG SEL Indication	0000 000 000 000 000	
299.	FREQUENCY COUNTER Display	1024	
309.	REG SEL Indication	BIT 10 is a "0"	

DATE

SUBSYSTEM Computer
DESCRIPTION

ASSY. Block II C-Computer

Tests the operation of the Link counters. The Inlink counter is checked under normal and marginal input conditions. The pulse count of an output sequence is checked to verify that the Outlink counter is operating properly. Downlink bit configuration, word rate, and pulse characteristics are also checked.

Rev. Let.	Date	TCR NO.	PAGES REVISED	APPROVAL	REFERENCES
A	8-6-68	36664	7	D.S.	JDC's 05402, 05405, 05413, 05414, 05129, ND-1021042, and ND-1021043
				MIT NASA	
				EAZD	
					IMPORTANT
					INTERVAL As required
					TOOLS AND MATERIAL

PREPARATION

1. Verify that the Programmer and Monitor and Logic Drawer No. 2 Panels are set-up as specified in JDC 05413.

2. Verify that the XY and RDC Interface Panels are set-up as specified in JDC 05414.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel, the Logic Drawer No. 2 panel and the XY Interface panel of the CTS.

3. Verify that the STRT1/STRT2 switch on the Buffer Circuit Assembly is in the OFF position.

4. Set the Y MARGINS switch to the V1 (Low One) position.

5. Press the SINGLE PULSE indicator switch to the on (illuminated) position.

INLINK TEST

6. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

7. Press Keys CL, 00000, 00000.

8. Verify that the RZ display is 0000 000 000 000 000.

9. Verify that the REG SEL display is 0000 000 000 000 000.

10. Press the EXECUTE button.

11. Verify that the LINC indicator is on.

12. Press Keys CL, 00013, 00000.

13. Verify that the RZ display is 0000 000 000 001 011.

VERIFICATION WITH SIGNAL REQUIRED BEFORE USE

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY. Block II C-Computer

14. Verify that the REG SEL display is 0000 000 000 000 000.

15. Press the CHANNEL button.

16. Press the EXECUTE button.

17. Verify that the LINC indicator is on.

18. Press Keys CL, 00045, 00000.

19. Verify that the RZ display is 0000 000 000 100 101.

20. Verify that the REG SEL display is 0000 000 000 000 000.

21. Press the EXECUTE button.

22. Set the Agreement A switches to XXXX 0045.

23. Set the Agreement A function switch to the SINGLE PULSE position.

24. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.

25. Press Keys CL, 0000.

26. Verify that the RZ display is 0000 000 000 000 000.

27. Press the EXECUTE button.

28. Press the MONITOR indicator switch to the on (illuminated) position.

29. Set the AGC INPUT COUNTERS switch to position 9.

30. Press the POSITIVE indicator switch to the on (illuminated) position.

31. Press the CH33-10 indicator switch on the RDC INTERFACE to the on (illuminated) position.

32. Set the T12 COUNTER STOP switch to the OFF position.

33. Set the INCREMENTS INHIBIT switch to the OFF position.

34. Press the PROCEED button.

35. Verify that the RG display is 0000 000 000 000 000.

36. Press the SINGLE PULSE button three times.

37. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.

38. Set the Y MARGINS switch to the V2 (High Zero) position.

39. Press the SINGLE PULSE button 3 times.

40. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.

41. Set the Y MARGINS switch to the V3 position.

42. Press the POSITIVE indicator switch to the off (extinguished) position.

43. Press the NEGATIVE indicator switch to the on (illuminated) position.

44. Press the SINGLE PULSE button three times.

45. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

46. Set the Y MARGINS switch to the V2 position.

47. Press the SINGLE PULSE button three times.

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY. Block II C-Computer

48. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

49. Set the Y MARGINS switch to the NORM position.

No Cross Link Input Check

50. Set the T12 COUNTER STOP switch to the ON position.

51. Set the AGC INPUT COUNTERS switch to position 10.

52. Set the T12 COUNTER STOP switch to the OFF position.

53. Press the PROCEED button.

54. Press the SINGLE PULSE button three times.

55. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

56. Set the Y MARGINS switch to the V2 position.

57. Press the SINGLE PULSE button three times.

58. Verify that the RG display is 0000 000 000 111 000.

59. Set the Y MARGINS switch to the NORM position.

60. Press the NEGATIVE indicator switch to the off (extinguished) position.

61. Press the POSITIVE indicator switch to the on (illuminated) position.

62. Press the SINGLE PULSE button three times.

63. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

64. Set the Y MARGINS switch to the V2 position.

65. Press the SINGLE PULSE button three times.

66. Verify that the RG display is 0000 000 000 111 000.

67. Set the Y MARGINS switch to the V3 position.

Cross Link Input Check

68. Set the INCREMENTS INHIBIT switch to the ON position.

69. Set the T12 COUNTER STOP switch to the ON position.

70. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.

71. Press Keys CL, 00013, 00020.

72. Verify that the RZ display is 0000 000 000 001 011.

73. Verify that the REG SEL display is 0000 000 000 010 000.

74. Press the CHANNEL button.

75. Press the EXECUTE button.

76. Verify that the LINC indicator is on.

77. Press Keys CL, 00045, 00000.

78. Verify that the RZ display is 0000 000 000 100 101.

79. Verify that the REG SEL display is 0000 000 000 000 000.

80. Press the EXECUTE button.

81. Verify that the LINC indicator is on.

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY. Block II C-Computer

82. Press the MONITOR indicator switch to the on (illuminated) position.

83. Set the INCREMENTS INHIBIT switch to the OFF position.

84. Set the T12 COUNTER STOP switch to the OFF position.

85. Press the PROCEED button.

86. Press the SINGLE PULSE button three times.

87. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.

88. Set the Y MARGINS switch to the V2 position.

89. Press the SINGLE PULSE button three times.

90. Verify that the RG display is 0000 000 000 000 111. Stamp data sheet.

91. Set the Y MARGINS switch to the V3 position.

92. Press the POSITIVE indicator switch to the off (extinguished) position.

93. Press the NEGATIVE indicator switch to the on (illuminated) position.

94. Press the SINGLE PULSE button three times.

95. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

96. Set the Y MARGINS switch to the V2 position.

97. Press the SINGLE PULSE button three times.

98. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

99. Set the Y MARGINS switch to the NORM position.

No Uplink Input Check

100. Set the T12 COUNTER STOP switch to the ON position.

101. Set the AGC INPUT COUNTERS switch to position 9.

102. Set the T12 COUNTER STOP switch to the OFF position.

103. Press the PROCEED button.

104. Press the SINGLE PULSE button three times.

105. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.

106. Set the Y MARGINS switch to the V2 position.

107. Press the SINGLE PULSE button three times.

108. Verify that the RG display is 0000 000 000 111 000.

109. Set the Y MARGINS switch to the NORM position.

110. Press the NEGATIVE indicator switch to the off (extinguished) position.

111. Press the POSITIVE indicator switch to the on (illuminated) position.

112. Press the SINGLE PULSE button three times.

DATE 18 JAN 68

JOB LINK COUNTERS TEST		JDC 05792 REV A PAGE 5 OF 13
SUBSYSTEM	Computer	ASSY Block II C-Computer
113. Verify that the RG display is 0000 000 000 111 000. Stamp data sheet.		130. Set the INCREMENTS INHIBIT switch to the OFF position.
114. Set the Y MARGINS switch to the V2 position.		131. Set the T12 COUNTER STOP switch to the OFF position.
115. Press the SINGLE PULSE button three times.		132. Press the PROCEED button.
116. Verify that the RG display is 0000 000 000 111 000.		133. Set the INCREMENTS INHIBIT switch to the ON position.
117. Set the Y MARGINS switch to the NORM position.		134. Set the T12 COUNTER STOP switch to the ON position.
<u>Cross Link Rate Check</u>		135. Press Keys CL, 0033.
118. Set the AGC INPUT COUNTERS switch to position 10.		136. Verify that the RZ display is 0000 000 000 011 011.
119. Set the INCREMENTS INHIBIT switch to the ON position.		137. Press the CHANNEL button.
120. Set the T12 COUNTER STOP switch to the ON position.		138. Press the EXECUTE button.
121. Press the SINGLE PULSE indicator switch to the off (extinguished) position.		139. Verify that the OINC indicator is on.
122. Press the STANDARD RATE indicator switch to the on (illuminated) position.		140. Verify that bit 11 of the REG SEL display is a "1". Stamp data sheet.
123. Press the READ AGC indicator switch to the on (illuminated) position.		141. Press the STANDARD RATE indicator switch to the off (extinguished) position.
124. Press Keys CL, 0033.		142. Press the ALARM RATE indicator switch to the on (illuminated) position.
125. Verify that the RZ display is 0000 000 000 011 011.		143. Set the INCREMENTS INHIBIT switch to the OFF position.
126. Press the CHANNEL button.		144. Set the T12 COUNTER STOP switch to the OFF position.
127. Press the EXECUTE button.		145. Press the PROCEED button.
128. Verify that the OINC indicator is on.		146. Set the INCREMENTS INHIBIT switch to the ON position.
129. Verify that bit 11 of the REG SEL display is a "1".		147. Set the T12 COUNTER STOP switch to the ON position.

DATE 18 JAN 68

JOB LINK COUNTERS TEST		JDC 05792 REV A PAGE 6 OF 13
SUBSYSTEM	Computer	ASSY Block II C-Computer
148. Press Keys CL, 0033.		165. Set the INCREMENTS INHIBIT switch to the OFF position.
149. Verify that the RZ display is 0000 000 000 011 011.		166. Set the T12 COUNTER STOP switch to the OFF position.
150. Press the CHANNEL button.		167. Press the PROCEED button.
151. Press the EXECUTE button.		168. Verify that the RG display is 0000 000 000 000 000.
152. Verify that the OINC indicator is on.		169. Press the SINGLE PULSE button three times.
153. Verify that bit 11 of the REG SEL display is a "0". Stamp data sheet.		170. Verify that the RG display is 0000 000 000 000 000. Stamp data sheet.
154. Press the ALARM RATE indicator switch to the off (extinguished) position.		171. Press the POSITIVE indicator switch to the off (extinguished) position.
155. Press the SINGLE PULSE indicator switch to the on (illuminated) position.		172. Press the NEGATIVE indicator switch to the on (illuminated) position.
<u>Block Uplink Check</u>		173. Press the SINGLE PULSE button three times.
156. Set the AGC INPUT COUNTERS switch to position 9.		174. Verify that the RG display is 0000 000 000 000 000. Stamp data sheet.
157. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		175. Set the INCREMENTS INHIBIT switch to the ON position.
158. Press Keys CL, 00045, 00000.		176. Set the T12 COUNTER STOP switch to the ON position.
159. Verify that the RZ display is 0000 000 000 100 101.		177. Press the CH33-10 indicator switch on the RDC INTERFACE panel to the on (illuminated) position.
160. Verify that the REG SEL display is 0000 000 000 000 000.		<u>Block Inlink Check</u>
161. Press the EXECUTE button.		178. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
162. Verify that the LINC indicator is on.		179. Press Keys CL, 00013, 00049.
163. Press the MONITOR indicator switch to the on (illuminated) position.		
164. Press the CH33-10 indicator switch on the RDC INTERFACE panel to the off (extinguished) position.		

DATE 18 JAN 68

JOB LINK COUNTERS TEST		JDC 05792 REV A PAGE 7 OF 13
SUBSYSTEM	Computer	ASSY Block II C-Computer
180. Verify that the RZ display is 0000 000 000 001 011.		198. Press the POSITIVE indicator switch to the on (illuminated) position.
181. Verify that the REG SEL display is 0000 000 000 100 000.		199. Press the SINGLE PULSE button three times.
182. Press the CHANNEL button.		200. Verify that the RG display is 0000 000 000 000 000. Stamp data sheet.
183. Press the EXECUTE button.		201. Set the AGC INPUT COUNTER switch to position 9.
184. Verify that the LINC indicator is on.		202. Press the SINGLE PULSE button three times.
185. Press the MONITOR indicator switch to the on (illuminated) position.		203. Verify that the RG display is 0000 000 000 000 000. Stamp data sheet.
186. Press the CL Key.		204. Set the INCREMENTS INHIBIT switch to the ON position.
187. Press the EXECUTE button.		205. Set the T12 COUNTER STOP switch to the ON position.
188. Set the INCREMENTS INHIBIT switch to the OFF position.		206. Press the POSITIVE indicator switch to the off (extinguished) position.
189. Set the T12 COUNTER STOP switch to the OFF position.		207. Press the SINGLE PULSE switch to the off (extinguished) position.
190. Press the PROCEED button.		208. Set the AGC INPUT COUNTERS switch to position 1.
191. Verify that the RG display is 0000 000 000 000 000.		209. Set the Agreement A function switch to the OFF position.
192. Press the SINGLE PULSE button three times.		OUTLINK TEST
193. Verify that the RG display is 0000 000 000 000 000.		210. Press the LOAD CHAN S 510 OHMS indicator switch to the on (illuminated) position.
194. Set the AGC INPUT COUNTER switch to position 10.		211. Set the FREQ + PHASE switch to the FR T T → S position.
195. Press the SINGLE PULSE button three times.		212. Prepare the CTS FREQUENCY COUNTER for operation as specified in step 1 of JDC 05402.
196. Verify that the RG display is 0000 000 000 00 000.		
197. Press the NEGATIVE indicator switch to the off (extinguished) position.		


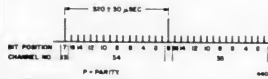
DATE 18 JAN 68

JOB LINK COUNTERS TEST		JDC 05792 REV A PAGE 8 OF 13
SUBSYSTEM	Computer	ASSY Block II C-Computer
NOTE: During this test, the FREQUENCY COUNTER is to be operated as described under PROCEDURE on JDC 05402.		229. Press the EXECUTE button.
213. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		230. Verify that the LINC indicator is on.
214. Press Keys CL, 00057, 77777.		231. Press the READ AGC indicator switch to the on (illuminated) position.
215. Verify that the RZ display is 0000 000 000 101 111.		232. Press Keys CL, 0057.
216. Verify that the REG SEL display is 0111 111 111 111 111.		233. Verify that the RZ display is 0000 000 000 101 111.
217. Press the EXECUTE button.		234. Press the EXECUTE button.
218. Verify that the LINC indicator is on.		235. Verify that the OINC indicator is on.
219. Press the READ AGC indicator switch to the on (illuminated) position.		236. Verify that the REG SEL display is 1101 010 101 010 101. Stamp data sheet.
220. Press Keys CL, 0057.		237. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.
221. Verify that the RZ display is 0000 000 000 101 111.		238. Press Keys CL, 00057, 00000.
222. Press the EXECUTE button.		239. Verify that the RZ display is 0000 000 000 101 111.
223. Verify that the OINC indicator is on.		240. Verify that the REG SEL display is 0000 000 000 000 000.
224. Verify that the REG SEL display is 1111 111 111 111 111. Stamp data sheet.		241. Press the EXECUTE button.
225. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.		242. Verify that the LINC indicator is on.
226. Press Keys CL, 00057, 52525.		243. Press the READ AGC indicator switch to the on (illuminated) position.
227. Verify that the RZ display is 0000 000 000 101 111.		244. Press Keys CL, 0057.
228. Verify that the REG SEL display is 0101 010 101 010 101.		245. Press the EXECUTE button.
		246. Verify that the OINC indicator is on.
		247. Verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

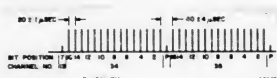
DATE 18 JAN 68

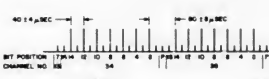
SUBSYSTEM	Computer	ASSY	Block II C-Computer
DOWNLINK TEST			
248. Inspect the signal cabling between the XY Interface Panel and the Oscilloscope panels for the connections specified in JDC 05129, step 12.			
NOTE: The operational procedure for the CTS Oscilloscope specified in JDC 05405 are to be used in performing this test, except where specified in the procedure below.			
249. Verify that a cable is connected between the EXT SYNC jack of the INTERFACE SIGNALS connector plate, and the EXT TRIG input jack of the NORMAL AND DELAYING TRIGGERING section of the Oscilloscope.			
250. On the NORMAL AND DELAYING TRIGGERING section of the Oscilloscope:			
a. Set the SOURCE switch to the EXT position.			
b. Set the COUPLING switch to the DC position.			
c. Verify that the SLOPE switch is in the + position.			
251. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.			
252. Press Keys CL, 00100, 52525.			
253. Press the EXECUTE button.			
254. Press Keys CL, 00101, 30100.			
255. Press the EXECUTE button.			
256. Press Keys CL, 00102, 00006.			
257. Press the EXECUTE button.			
258. Press Keys CL, 00103, 01034.			
259. Press the EXECUTE button.			
260. Press Keys CL, 00104, 30100.			
261. Press the EXECUTE button.			
262. Press Keys CL, 00105, 00006.			
263. Press the EXECUTE button.			
264. Press Keys CL, 00106, 01035.			
265. Press the EXECUTE button.			
266. Press Keys CL, 00107, 00101.			
267. Press the EXECUTE button.			
268. Press Keys CL, 00014, 00100.			
269. Press the CHANNEL button.			
270. Press the EXECUTE button.			
271. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.			
272. Press Keys CL, 0101.			
273. Press the EXECUTE button.			
274. Set the MONITOR indicator switch to the on (illuminated) position.			
275. Set the T12 COUNTER STOP and INCREMENTS INHIBIT switches to the OFF position.			
276. Press the PROCEED button.			
277. Set the CHANNEL S switches to position 102.			
278. Set the SCOPE switch to the S position.			

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
279. Press the DL ENABLE indicator switch to the on (illuminated) position.			
280. Press the WORD RATE 50 PPS indicator switch to the on (illuminated) position.			
281. Verify that the Oscilloscope displays the pulse configuration shown on Figure 1. Stamp data sheet.			
			
Figure 1			
282. Set the CHANNEL S switches to position 103.			
283. Verify that the Oscilloscope displays the pulse configuration shown on Figure 1. Stamp data sheet.			
284. Set the NISQ COUNTER STOP switch to the ON position.			
285. Set the T12 COUNTER STOP switch to the ON position.			
286. Set the NISQ COUNTER STOP switch to the OFF position.			
287. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.			
288. Press Keys CL, 00100, 00000.			
289. Press the EXECUTE button.			
290. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.			
291. Press Keys CL, 0101.			
292. Press the EXECUTE button.			
293. Press the MONITOR indicator switch to the on (illuminated) position.			
294. Set the T12 COUNTER STOP switch to the OFF position.			
295. Press the PROCEED button.			
296. Set the CHANNEL S switches to position 102.			
297. Verify that the Oscilloscope displays the pulse configuration shown on Figure 2. Stamp data sheet.			
			
Figure 2			
298. Set the CHANNEL S switches to position 103.			
299. Verify that the Oscilloscope displays the pulse configuration shown on Figure 2. Stamp data sheet.			
300. Set the NISQ COUNTER STOP switch to the ON position.			
301. Set the T12 COUNTER STOP switch to the ON position.			
302. Set the NISQ COUNTER STOP switch to the OFF position.			
303. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.			

DATE 18 JAN 68

SUBSYSTEM	Computer	ASSY	Block II C-Computer
304. Press Keys CL, 00100, 77777.			
305. Press the EXECUTE button.			
306. Press Keys CL, 00013, 00000.			
307. Press the CHANNEL button.			
308. Press the EXECUTE button.			
309. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.			
310. Press Keys CL, 0101.			
311. Press the EXECUTE button.			
312. Press the MONITOR indicator switch to the on (illuminated) position.			
313. Set the T12 COUNTER STOP switch to the OFF position.			
314. Press the PROCEED button.			
315. Set the CHANNEL S switches to position 102.			
316. Verify that the Oscilloscope displays the pulse configuration shown on Figure 3. Stamp data sheet.			
			
Figure 3			
317. Set the CHANNEL S switches to position 103.			
318. Verify that the Oscilloscope displays the pulse configuration shown on Figure 3. Stamp data sheet.			
319. Set the NISQ COUNTER STOP switch to the ON position.			
320. Set the T12 COUNTER STOP switch to the ON position.			
321. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.			
322. Set the NISQ COUNTER STOP switch to the OFF position.			
323. Press Keys CL, 00100, 25252.			
324. Press the EXECUTE button.			
325. Press the TRANSFER CONTROL indicator switch to the on (illuminated) position.			
326. Press Keys CL, 0101.			
327. Press the EXECUTE button.			
328. Press the MONITOR indicator switch to the on (illuminated) position.			
329. Set the T12 COUNTER STOP switch to the OFF position.			
330. Press the PROCEED button.			
331. Set the CHANNEL S switches to position 102.			
332. Verify that the Oscilloscope displays the pulse configuration shown on Figure 4. Stamp data sheet.			
333. Set the CHANNEL S switches to position 103.			

SUBSYSTEM	Computer	ASSY	Block II C-Computer
334. Verify that the Oscilloscope displays the pulse configuration shown on Figure 4. Stamp data sheet.			
			
Figure 4			
Downlink Too Fast			
335. Set the NISQ COUNTER STOP switch to the ON position.			
336. Set the T12 COUNTER STOP switch to the ON position.			
337. Set the NISQ COUNTER STOP switch to the OFF position.			
338. Press the KEYBOARD LOAD indicator switch to the on (illuminated) position.			
339. Press Keys CL, 00033, 00000.			
340. Press the CHANNEL button.			
341. Press the EXECUTE button.			
342. Press the READ-ACC indicator switch to the on (illuminated) position.			
343. Press Keys CL, 0033.			
344. Press the CHANNEL button.			
345. Press the EXECUTE button.			
346. Verify that the RG display is XXXX 111 111 111 111. Stamp data sheet.			
347. Press the WORD RATE 50 PPS indicator switch to the off (extinguished) position.			
348. Press the WORD RATE 300 PPS indicator switch to the on (illuminated) position.			
349. Press Keys CL, 0032.			
350. Press the CHANNEL button.			
351. Press the EXECUTE button.			
352. Verify that the RG display is XXXX 011 111 111 111. Stamp data sheet.			
353. Press the WORD RATE 300 PPS indicator switch to the off (extinguished) position.			
354. Press the WORD RATE 50 PPS indicator switch to the on (illuminated) position.			
Pulse Characteristics			
355. Set the Oscilloscope NORMAL AND DELAYING TRIGGERING SOURCE switch to the INT position, and press the TRANSFER CONTROL indicator switch to the on (illuminated) position.			
356. Press Keys CL, 0101.			
357. Press the EXECUTE button.			
358. Press the MONITOR indicator switch to the on (illuminated) position.			
359. Set the T12 COUNTER STOP switch to the OFF position.			
360. Press the PROCEED button.			
361. Set the CHANNEL S switches to position 102.			
362. Measure and record the pulse characteristics displayed as specified by Figure 5.			

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY Block II C-Computer

363. Set the CHANNEL S switches to position 103.

364. Measure and record the pulse characteristics displayed as specified by Figure 5.

365. Set the T12 COUNTER STOP switch to the ON position.

366. Press the WORD RATE 50 PPS indicator switch to the off (extinguished) position.

367. Press the DL ENABLE indicator switch to the off (extinguished) position.

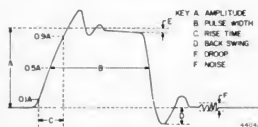


Figure 5

DATE 18 JAN 68

APOLLO G&N

EQUIPMENT TEST

DATA SHEET 1 OF 3

JDC
NO. 05792
REV. A
INITIAL TORR 35464

JOB LINK COUNTERS TEST

ASSEMBLY UNDER TEST			TEST HISTORY		
TITLE			DATE	START	END
SER. NO.	DWG.	REV.	TIME	START	END
TOTAL ELAPSED					
MAJOR GROUND SUPPORT EQUIPMENT					
NAME			SER. NO.	CAL DATE	
NAME			SER. NO.	CAL DATE	
CONDUCTED BY			APPROVED BY		
NAME/AFFILIATION			NAME/AFFILIATION		

Step	Parameter	Specification	Results
37	RG Indication	0000 000 000 000 111	
40	RG Indication	0000 000 000 000 111	
45	RG Indication	0000 000 000 111 000	
48	RG Indication	0000 000 000 111 000	
55	RG Indication	0000 000 000 111 000	
63	RG Indication	0000 000 000 111 000	
87	RG Indication	0000 000 000 000 111	
90	RG Indication	0000 000 000 000 111	
95	RG Indication	0000 000 000 111 000	
98	RG Indication	0000 000 000 111 000	
105	RG Indication	0000 000 000 111 000	
113	RG Indication	0000 000 000 111 000	
140	REG SEL Indication	BIT 11 is a "1"	
153	REG SEL Indication	BIT 11 is a "0"	
170	RG Indication	0000 000 000 000 000	

DATE 18 JAN 68

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 2 OF 3JDC
NO. 05792
REV. A

JOB LINK COUNTERS TEST

Step	Parameter	Specification	Results
174	RG Indication	0000 000 000 000 000	
200	RG Indication	0000 000 000 000 000	
203	RG Indication	0000 000 000 000 000	
224	REG SEL Indication	1111 111 111 111 111	
236	REG SEL Indication	1101 010 101 010 101	
247	REG SEL Indication	0000 000 000 000 000	
281	Oscilloscope display agrees with Figure 1		
283	Oscilloscope display agrees with Figure 1		
297	Oscilloscope display agrees with Figure 2		
299	Oscilloscope display agrees with Figure 2		
316	Oscilloscope display agrees with Figure 3		
318	Oscilloscope display agrees with Figure 3		
332	Oscilloscope display agrees with Figure 4		
334	Oscilloscope display agrees with Figure 4		
346	RG Indication	XXXX 111 111 111 111	
352	RG Indication	XXXX 011 111 111 111	
362	Pulse Characteristics (X-017)		
a.	Amplitude (A)	6.0 ± 1.0 Volts	
b.	Pulse Width (B)	3.00 ± 0.25 μsec	
c.	Backswing (D)	NMT 40% of A	
d.	Droop (E)	NMT 15% of A	
e.	Rise Time (C)	NMT 0.2 μsec	
f.	Noise (F)	NMT 0.4 Vp-p	

DATE 18 JAN 68

APOLLO G&N
EQUIPMENT TEST
DATA SHEET 3 OF 3JDC
NO. 05792
REV. A

JOB LINK COUNTERS TEST

Step	Parameter	Specification	Results
364	Pulse Characteristics (X-085)		
a.	Amplitude (A)	6.0 ± 1.0 Volts	
b.	Pulse Width (B)	3.00 ± 0.25 μsec	
c.	Backswing (D)	NMT 40% of A	
d.	Droop (E)	NMT 15% of A	
e.	Rise Time (C)	NMT 0.2 μsec	
f.	Noise (F)	NMT 0.4 Vp-p	

DATE 18 JAN 68

JOB SELF-CHECK TEST PROGRAM		JDC 05794 REV. C PAGE 1 OF 2
SUBSYSTEM Computer		INITIAL TDRR 35464 D.S. PGS 1
DESCRIPTION		ASSY. Block II C-Computer

The Self-Check Test program provides an automatic check of the computer, by the computer. Self Check exercises the following computer functions: computer control pulses, special and central registers, erasable memory, fixed rope memory, arithmetic operations, and DSKY displays.

Rev. Let.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JFC	D.S.	MI	NASA	
A	5-23-68	36249	1	-	EA	EA	JDC's 05413, 05.14, ND-1021042, and ND-1021043
B	8-6-68	36666	1	-	EA	EA	IMPORTANT
C	2-27-69	37378	2	-	EA	-	INTERVAL As required
							TOOLS AND MATERIAL System Test or Flight Ropes

PREPARATION

1. Verify that the Buffer Circuit Assembly, Programmer and Monitor, and Logic Drawer No. 2 panels are set-up as specified in JDC 05413.
2. Verify that the XY and RDC Interface Panels are set up as specified in JDC 05414.
3. On the RDC Interface Panel, press the CH30-15 pushbutton to the on (illuminated) position. Verify that the DSKY TEMP indicator is extinguished.
4. Set the INHIBIT INCREMENTS, T12 COUNTER STOP, and INHIBIT INTERRUPT switches to the OFF position and press the PROCEED button.

5. Initialize the computer by depressing the following DSKY pushbuttons:

a. VERB 36
ENTR

6. Depress the following DSKY pushbuttons:

a. VERB 21 NOUN 01 ENTR
b. 01362 ENTR
c. 00000 ENTR
d. 01365 ENTR
e. 00000 ENTR
f. NOUN 15 ENTR
g. 00000 ENTR
h. 00000 ENTR
i. 00000 ENTR
j. 00000 ENTR
k. 00000 ENTR
l. 00000 ENTR

JOB SELF-CHECK TEST PROGRAM		JDC 05794 REV C PAGE 2 OF 2
SUBSYSTEM Computer		ASSY. Block II C-Computer

7. Initiate SELF-CHECK program by depressing the following DSKY pushbuttons:

a. VERB 21
NOUN 27
ENTR
b. 00010
ENTR

8. Monitor SELF-CHECK operation by depressing the following pushbuttons:

a. VERB 15
NOUN 01
ENTR
b. 1366
ENTR

9. Register 1 displays the contents of S Counter, location 1366. Register 1 display will increment at the start of each of the seven minor loops that make up the internal computer self check.

10. Register 2 displays the contents of S counter + 1, location 1367. Register 2 display will increment each time the erasable memory test of SELF-CHECK is completed.

11. Register 3 displays the contents of S counter + 2, location 1370. Register 3 display will increment each time SELF-CHECK successfully completes the divided cycle.

NOTE: If the system test or flight ropes do not contain a divide test, Register 3 will display 00000.

12. If a failure occurs during SELF-CHECK, the following DSKY displays will be present:

- a. Register 1 displays the SELF-CHECK error code 01102. If multiple errors occur, Register 1 displays 41102.
- b. Register 2 displays the return address (contents of Register Z + 1) where the failure occurred in the program.
- c. Register 3 displays the number of errors that occurred.
- d. The PROG indicator is turned ON.

13. If a RESTART occurs, Registers 1, 2, and 3 will display 00000 and the RE-START indicator will be ON.

14. If a RESTART or a failure occurs during the SELF-CHECK test, discontinue further testing, and note DSKY display on data sheet.

15. Allow the SELF-CHECK program to run for approximately 10 minutes. If no errors occur terminate the program with VERB, 36, ENTR.

DATE 18 JAN 68

VERIFICATION WITH SIDL REQUIRED BEFORE USE

DATE 18 JAN 68

APOLLO GBN
EQUIPMENT TEST
DATA SHEET 1 OF 1

NO. 05794 JDC
REV. C
INITIAL TDRR 35464

JOB SELF-CHECK TEST PROGRAM

ASSEMBLY UNDER TEST		TEST HISTORY	
TITLE		DATE	START END SITE / LOCATION
SER. NO.	DWG REV.	TIME	START END TOTAL ELAPSED
MAJOR GROUND SUPPORT EQUIPMENT			
NAME	SER. NO.	CAL DATE	
NAME	SER. NO.	CAL DATE	
CONDUCTED BY	NAME/AFFILIATION	APPROVED BY	NAME/AFFILIATION

Step	Parameter	Specification	Results
14.	SELF-CHECK Failure displays DSKY Registers, PROG and RESTART Indicators	Register 1 displays Register 2 displays Register 3 displays PROG Indicator on RESTART Indicator on	

DATE 18 JAN 68

SUBSYSTEM Computer

ASSY Block II C-Computer

DESCRIPTION

Exercises keys 0 through 9, +, -, VERB, NOUN, CLR, KEY REL, ENTER, RSET. Tests the operation of the RSET and STBY key functions.

Rev. Lst.	Date	TDRR NO.	PAGES REVISED		APPROVAL		REFERENCES
			JDC	D.S.	MLT	NASA	
							JDC 05413, ND-1021042, and ND-1021043
							IMPORTANT
							INTERVAL
							As required
							TOOLS AND MATERIAL
							System Test or Flight Ropes

PREPARATION

1. Perform the Programmer and Monitor and Logic Drawer No. 2 Panel Preliminary Test Set-Up Procedure, JDC 05413.

NOTE: Unless specified otherwise, all controls and indicators referenced in this procedure are on the Programmer and Monitor panel and the Logic Drawer No. 2 panel of the CTS.

OPERATION

2. Press the READ AGC indicator switch to the on (illuminated) position.

3. Press Keys CL, 0015

4. Verify that the RZ display is 0000 000 000 001 101.

5. Press the CHANNEL button.

6. Press the EXECUTE button.

7. Verify that the OINC indicator is on.

8. Press the FORCED READ indicator switch to the on (illuminated) position.

9. Set the T12 COUNTER STOP switch to the OFF position.

10. Press the PROCEED button.

11. Verify that the OINC indicator is on.

12. Verify that the STPIT indicator is off.

13. Continuously press the DSKY VERB Key and verify that the REG SEL display is 0000 000 000 010 001. Stamp data sheet.

14. Release the DSKY VERB Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

VERIFICATION WITH SIGL REQUIRED BEFORE USE

DATE _____

SUBSYSTEM Computer

ASSY Block II C-Computer

15. Continuously press the DSKY NOUN Key and verify that the REG SEL display is 0000 000 000 011 111. Stamp data sheet.

16. Release the DSKY NOUN Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

17. Continuously press the DSKY + Key and verify that the REG SEL display is 0000 000 000 011 010. Stamp data sheet.

18. Release the DSKY + Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

19. Continuously press the DSKY - Key and verify that the REG SEL display is 0000 000 000 011 011. Stamp data sheet.

20. Release the DSKY - Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

21. Continuously press the DSKY 0 Key and verify that the REG SEL display is 0000 000 000 010 000. Stamp data sheet.

22. Release the DSKY 0 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

23. Continuously press the DSKY 7 Key and verify that the REG SEL display is 0000 000 000 000 111. Stamp data sheet.

24. Release the DSKY 7 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

25. Continuously press the DSKY 4 Key and verify that the REG SEL display is 0000 000 000 000 100. Stamp data sheet.

26. Release the DSKY 4 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

27. Continuously press the DSKY 1 Key and verify that the REG SEL display is 0000 000 000 000 001. Stamp data sheet.

28. Release the DSKY 1 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

29. Continuously press the DSKY 8 Key and verify that the REG SEL display is 0000 000 000 001 000. Stamp data sheet.

30. Release the DSKY 8 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

31. Continuously press the DSKY 5 Key and verify that the REG SEL display is 0000 000 000 000 101. Stamp data sheet.

32. Release the DSKY 5 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

33. Continuously press the DSKY 2 Key and verify that the REG SEL display is 0000 000 000 000 010. Stamp data sheet.

34. Release the DSKY 2 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

35. Continuously press the DSKY 9 Key and verify that the REG SEL display is 0000 000 000 001 001. Stamp data sheet.

36. Release the DSKY 9 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

DATE _____

SUBSYSTEM Computer

ASSY Block II C-Computer

37. Continuously press the DSKY 6 Key and verify that the REG SEL display is 0000 000 000 000 110. Stamp data sheet.

38. Release the DSKY 6 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

39. Continuously press the DSKY 3 Key and verify that the REG SEL display is 0000 000 000 000 011. Stamp data sheet.

40. Release the DSKY 3 Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

41. Continuously press the DSKY CLR Key and verify that the REG SEL display is 0000 000 000 011 110. Stamp data sheet.

42. Release the DSKY CLR Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

43. Continuously press the DSKY KEY REL Key and verify that the REG SEL display is 0000 000 000 011 001. Stamp data sheet.

44. Release the DSKY KEY REL Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

45. Continuously press the DSKY ENTER Key and verify that the REG SEL display is 0000 000 000 011 100. Stamp data sheet.

46. Release the DSKY ENTER Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

47. Continuously press the DSKY RSET Key and verify that the REG SEL display is 0000 000 000 010 010. Stamp data sheet.

48. Release the DSKY RSET Key and verify that the REG SEL display is 0000 000 000 000 000. Stamp data sheet.

49. Press the MONITOR indicator switch to the on (illuminated) position.

50. Press the FORCED READ switch to the off position.

51. Set the INHIBIT INTERRUPT and INHIBIT INCREMENTS switches to the off position.

52. Press the FRESH START button.

53. Press the PROCEED button.

54. Verify that the DSKY RESTART indicator is on.

55. Press the DSKY RSET Key.

56. Verify that the DSKY RESTART indicator is extinguished. Stamp data sheet.

57. Press the DSKY VERB Key.

58. Press DSKY Keys 60.

59. Press the DSKY ENTR Key.

60. Hold down the DSKY STBY Key until the STBY indicator illuminates and time the interval. (Indicator should illuminate within 2.00 seconds after the STBY Key has been depressed.) Record time on data sheet.

61. Hold down the DSKY STBY Key for the interval recorded in step 60 above.

SUBSYSTEM Computer

ASSY Block II C-Computer

62. Press the FRESH START and PROCEED buttons.

63. Press the DSKY RSET Key.

64. Press the DSKY VERB Key.

65. Press DSKY Key 36.

66. Press the DSKY ENTR Key.

DATE _____

DATE _____

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 1 OF 3

JDC
NO. 05796
REV. _____
INITIAL TDOR 35464

JOB MAIN DSKY KEY TEST

ASSEMBLY UNDER TEST			TEST HISTORY		
TITLE _____	DATE _____	TIME _____	START _____	END _____	SITE / LOCATION _____
SER. NO. _____	OWG _____	REV. _____	START _____	END _____	TOTAL ELAPSED _____
MAJOR GROUND SUPPORT EQUIPMENT					
NAME _____	SER. NO. _____	CAL DATE _____			
NAME _____	SER. NO. _____	CAL DATE _____			
CONDUCTED BY _____		APPROVED BY _____			
NAME/AFFILIATION _____		NAME/AFFILIATION _____			

Step	Parameter	Specification	Results
13.	REG SEL Indication	0000 000 000 010 001	_____
14.	REG SEL indication	0000 000 000 000 000	_____
15.	REG SEL Indication	0000 000 000 011 111	_____
16.	REG SEL Indication	0000 000 000 000 000	_____
17.	REG SEL Indication	0000 000 000 011 010	_____
18.	REG SEL Indication	0000 000 000 000 000	_____
19.	REG SEL Indication	0000 000 000 011 011	_____
20.	REG SEL Indication	0000 000 000 000 000	_____
21.	REG SEL Indication	0000 000 000 010 000	_____
22.	REG SEL Indication	0000 000 000 000 000	_____
23.	REG SEL Indication	0000 000 000 000 111	_____
24.	REG SEL Indication	0000 000 000 000 000	_____
25.	REG SEL Indication	0000 000 000 000 100	_____
26.	REG SEL Indication	0000 000 000 000 000	_____
27.	REG SEL Indication	0000 000 000 000 001	_____

DATE _____

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 2 OF 3

JDC
NO. 05796
REV. _____

JOB MAIN DSKY KEY TEST

Step	Parameter	Specification	Results
28.	REG SEL Indication	0000 000 000 000 000	_____
29.	REG SEL Indication	0000 000 000 001 000	_____
30.	REG SEL Indication	0000 000 000 000 000	_____
31.	REG SEL Indication	0000 000 000 000 101	_____
32.	REG SEL Indication	0000 000 000 000 000	_____
33.	REG SEL Indication	0000 000 000 000 010	_____
34.	REG SEL Indication	0000 000 000 000 000	_____
35.	REG SEL Indication	0000 000 000 001 001	_____
36.	REG SEL Indication	0000 000 000 000 000	_____
37.	REG SEL Indication	0000 000 000 000 110	_____
38.	REG SEL Indication	0000 000 000 000 000	_____
39.	REG SEL Indication	0000 000 000 000 011	_____
40.	REG SEL Indication	0000 000 000 000 000	_____
41.	REG SEL Indication	0000 000 000 011 110	_____
42.	REG SEL Indication	0000 000 000 000 000	_____
43.	REG SEL Indication	0000 000 000 011 001	_____
44.	REG SEL Indication	0000 000 000 000 000	_____
45.	REG SEL Indication	0000 000 000 011 100	_____
46.	REG SEL Indication	0000 000 000 000 000	_____
47.	REG SEL Indication	0000 000 000 010 010	_____
48.	REG SEL Indication	0000 000 000 000 000	_____

DATE _____

APOLLO G & N
EQUIPMENT TEST
DATA SHEET 3 OF 3

JDC
NO. 05796
REV. _____

JOB MAIN DSKY KEY TEST

Step	Parameter	Specification	Results
56	DSKY RESTART indicator is extinguished		_____
60	DSKY STBY Indicator illuminates after STBY Key is depressed		_____

DATE _____